Integrating I and We

Veelen, Ruth van

Integrating *I* and *WE*

Cognitive Routes to Social Identification

Ruth van Veelen

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Promotor:	Prof. dr. S. Otten
Copromotor:	dr. N. Hansen
Beoordelingscommissie:	Prof dr. J.I. Krueger Prof dr. R. Spears Prof dr. K.I. van Oudenhoven – van der Zee

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Chapter 1

General Introduction

"One may regard the self as part of the group, or the group as a part of the self; in either case they are inseparable, and to the individual both are values."

(Newcomb, 1950; p. 297)

Every human being has an innate need to belong. In our search for social connectedness, we seek to create a bond and identify with groups who will provide us with a sense of safety, affection, well-being, and social structure (Baumeister & Leary, 1995). People who highly identify with a group attach a strong evaluative and emotional significance to their group membership. A large body of research has demonstrated the importance of social identification both for personal well-being (e.g., Jetten, Haslam, & Haslam, 2012) as well as for overall group functioning. For example, those who highly identify with an ingroup are highly concerned with their ingroup, strongly protect their ingroup relative to outgroups, and work hard to successfully attain group goals (e.g., Ashforth & Mael, 1989; Branscombe, Schmitt, & Harvey, 1999; Brown, 2000; Ellemers, Spears, & Doosje, 1999; van Knippenberg & Hogg, 2002; Haslam, van Knippenberg, Platow, & Ellemers, 2003). Hence, social identification is relevant and consequential for both the individual and the group. Social psychological research has shown that identification plays crucial role in explaining intra- as well as intergroup processes.

Despite the large body of research on why social identification is so important, we know relatively little about how people identify with groups. What are the cognitive processes explaining how individuals come to identify and attach significant emotional value to their ingroup membership? Providing an answer to this question seems pivotal in today's rapidly changing society, in which social identification and social cohesion in groups are no longer self-evident. Specifically, due to globalization, cultural migration, and advancing communication technology, Western societies become increasingly diverse and complex. As a consequence, larger pluralism in life style, beliefs, norms, and values emerges. On different levels, this trend challenges people's ability to form strong group bonds and to create of a sense of 'we-ness' and social cohesion in groups (Joppke, 2004; Putnam, 2007).

To illustrate this, the increased economic and political integration of European countries in the European Union has led many people to feel that their national identities are being threatened and becoming uncertain rather than well-defined (WWR, 2008). Moreover, schools, neighborhoods, and workplaces nowadays comprise of a complex combination of national, religious, cultural, and ethnic identities. People's adaptation to such diversity in daily life has proven to be quite

challenging (Crisp & Meleady, 2012; Plaut, Garnett, Buffardi, Sanchez-Burks, 2011). Also, advances in communication technology have led to an increase in virtual or computer-based groups, which have facilitated new forms of group bonding via the internet (see Kraut et al., 2002). Think for example, about Skype meetings, flex workers, Facebook or Whatsapp groups.

A crucial question is: how do people come to feel social connectedness with these groups? Clearly, we cannot rely on basic similarity-attraction principles (Byrne, 1971) to understand how people may identify with the above-mentioned groups. Therefore, it is highly important to broaden our understanding of how individuals identify with groups and create a sense of belongingness. Such understanding may provide us with social-psychological tools to foster and maintain strong social identification levels in a large variety of, often multi-layered and complex, social contexts.

In this dissertation, I aim to enhance the understanding of social identification processes from a cognitive perspective. I aim to demonstrate that there are two distinct cognitive processes that help to answer the question "How do people identify with groups?". The first process is based on people's perceived prototypicality or similarity to a group's stereotypical group characteristics. This process is called self-stereotyping and has been described in the literature on Social Identity (Tajfel & Turner, 1979) and Self-Categorization Theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). The second, more recently studied process emphasizes the role of the individual in the group, and relies on people's tendency to use unique, individual characteristics as a source of inference to create a mental representation of an ingroup's identity. This process is called self-anchoring and originates in literature on social cognition and social inference processes (e.g., Cadinu & Rothbart, 1996; Krueger, 1998).

To date, self-stereotyping and self-anchoring have lived relatively separate lives in the literature. Moreover, only self-stereotyping has been related to people's level of social identification in prior studies while the impact of self-anchoring, as a cognitive route to identification, was never investigated. Yet particularly this last cognitive route may provide valuable insight as to how people may identify with complex, ill-defined, or diverse groups. Therefore, in this dissertation I will investigate self-anchoring and self-stereotyping within one research paradigm and demonstrate that both processes to create self-group form important cognitive routes to social identification. Moreover, I will demonstrate that how people identify with groups varies in response to the specific properties of the group at stake: while in some group

contexts assimilation to stereotypical group norms (i.e., self-stereotyping) may most successfully instigate social identification, in other groups one may rather rely on the personal self as a basis for inferring such group bond (i.e., self-anchoring).

In the remainder of this introduction I will provide a short background of theory and research on both self-stereotyping and self-anchoring as cognitive processes instigating self-group overlap. Subsequently, I will outline prior literature on the link between self-stereotyping and social identification and discuss the limitations of self-stereotyping as sole cognitive explanation for social identification. Then, I will introduce self-anchoring as an additional cognitive process explaining social identification. Finally, I will provide an overview of the chapters in this dissertation.

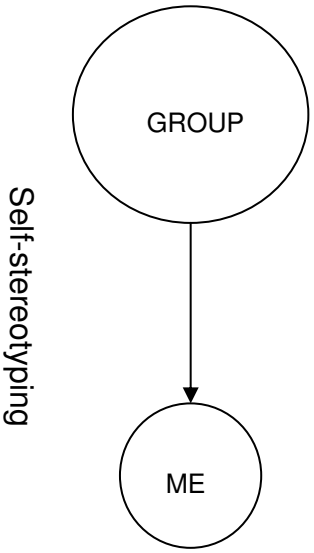
Importantly, this general introduction will be brief and functions as a reader's guideline for this dissertation, rather than an exhaustive overview of the literature. This particular set-up was chosen because the final chapter of this dissertation (Chapter 7) constitutes a theoretical review paper. Here, the reader will find a thorough overview of the background theory on self-anchoring and self-stereotyping. Also, critical reflection will be provided in this review on the limitations, implications, and on the future research potential of the work in this dissertation.

Cognitive processes to self-group overlap

Who we are is determined by our personal dispositions, goals, and values in life as well as by our group memberships (Markus & Kunda, 1986). For example, in answer to the question "Who are you?" I would confide you in some of my personal attributes (i.e., analytical, social, musical, chaotic) as well as some group memberships that form a central part of me (i.e., family member, social psychologist, researcher, Dutch, female). In essence, the groups that we belong to are inextricably linked to our self-concepts and vice versa (Smith & Henry, 1996).

The extent to which an ingroup is part of our self-concept determines the level of identification with that ingroup (Tropp & Wright, 2001). In other words, the more mental overlap we perceive between who we are as an individual and what the ingroup stands for the stronger the evaluative and emotional significance we attach to that ingroup. This implies that understanding how people create mental overlap between the self and an ingroup opens the door to understanding how people identify with groups: Is the group like me? Am I like the group? Or both?

I am like the group: Self-stereotyping

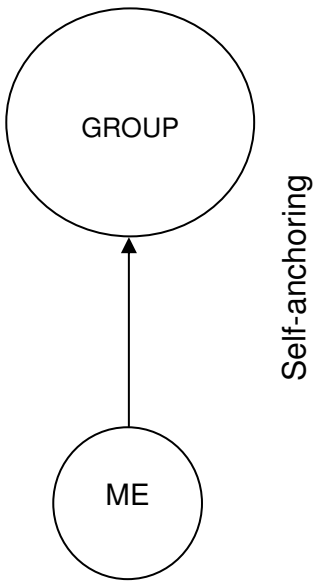


Classic self-categorization theorists (SCT; Hogg & Abrams, Tajfel & Turner, 1979; Turner et al., 1987) would argue that the "I-am-like-the-group" rhetoric applies to the attainment of self-ingroup overlap. In their view, emergence of self-ingroup overlap is a process in which the self assimilates to prototypical group characteristics – *self-stereotyping*. Specifically, it is assumed that people categorize the world into groups they do ("us") and do not ("them") belong to. This categorization emphasizes *differentiation between* groups and *assimilation within* groups (meta-contrast; e.g. Oakes, Haslam, & Turner, 1994). Such assimilation involves the depersonalization of self. In particular, SCT proposes that each individual has a personal self (defined by a person's unique characteristics) and a social self (defined by prototypical group characteristics), existing at opposite ends of the same continuum. When an ingroup identity becomes salient, the social self is activated and the personal self shifts to the background (i.e., depersonalizes; e.g., Oakes et al., 1994; Spears, Doosje, Ellemers, 1997). Consequently, people come to perceive themselves as interchangeable exemplars of a group's prototype. For example, when the Dutch national football team wins an important game, we ("the Dutch me") feel invincible! Importantly, self-stereotyping implies that there is a psychological discontinuity between people as individuals and people as group members (Turner & Onorato, 1999).

The group is like me: Self-anchoring

Self-anchoring is the exact opposite process from self-stereotyping to construe self - ingroup overlap. With self-anchoring, people infer mental self-ingroup overlap based on the projection of *personal* characteristics onto a group (Cadinu & Rothbart, 1996). As such, people come to perceive that "The-group-is-like-me". Self-

anchoring was first introduced by Cadinu and Rothbart (1996) to explain why people display ingroup favoritism in minimal groups. In a minimal group paradigm (MGP, Tajfel, Billig, Bundy, & Flament, 1971) people are randomly categorized in a meaningless group based on some trivial criteria (i.e., 'based on test X, you are in the "green" and not in the "blue" group'). But what does it mean to be in the "green" ingroup? Since no information is available on what characterizes the "green" group, Cadinu and Rothbart (1996) argued and found support for the idea that people form a positive association with their ingroup but not the outgroup by relying on the fact that they themselves are part of the ingroup. More specifically, the assumption is that people project their (typically) positive self-concept onto their ingroup and as a result come to perceive the ingroup as more favorable than outgroups. Later research corroborated this reasoning and showed that self-anchoring does not necessarily rest upon explicit social comparisons with outgroups, but may rather rely on a simple association between the typically positive self and the ingroup (Otten & Moskowitz, 2000; Otten & Wentura, 1999; Gramzow, Gaertner & Sedikides, 2001; Otten, 2002). Thus, whereas self-stereotyping accentuates intergroup level differentiations (similarity with ingroup, differentiation from outgroup), self-anchoring is a process that can take place entirely at an intragroup level, by merely focusing on the dynamic between the self and the ingroup (see also van Hoomissen & van Overwalle, 2010). For example, to the extent that I perceive myself as a person that is 'analytical' and 'musical', I may infer that these characteristics are also applicable to the "green" ingroup I belong to.



Later research revealed that self-anchoring is not only relevant in minimal but also in real groups. In real groups, aside from prototypical group norms, there are typically also cognitive gaps in the group's identity representation. For example, we know that psychology students are typically 'communicative' and 'emotionally intelligent', but are they also 'athletic', or 'musical'? Such gaps can be filled by using the personal self as an inferential basis (Otten & Epstude, 2006). In line with this reasoning, self-anchoring was demonstrated in real groups such as gender groups (Otten & Epstude, 2006), student groups (Riketta & Sacramento, 2008; van Veelen & Otten, 2008; van Veelen et al., 2011),

and using the Dutch nationality as a social category (van Veelen et al., 2012a).

In sum, in contrast to self-stereotyping principles, according to self-anchoring principles, the personal self can play a central role in shaping a bond between the self and the ingroup. Thus, while both processes instigate perceived overlap between the self and the group, the directional basis for this overlap is reversed: With self-stereotyping overlap is created top-down, based on similarity and conformity of the self to group prototypes, while with self-anchoring such overlap is created bottom-up, based in projection of individual characteristics of the personal self onto the group.

Self-stereotyping as cognitive route to social identification

According to SIT and SCT, self-stereotyping is *the* cognitive route explaining how people identify with groups: the more group members view themselves as interchangeable exemplars of a group's prototype, the more they identify with that group. Indeed, there is a large body of research empirically demonstrating the positive link between social identification and conformity to prototypical group norms (e.g., Ellemers, Spears & Doosje, 2002; Spears et al., 1997; Latrofa, Cadinu, Vaes, & Carnaghi, 2010; Terry & Hogg, 1996; White, Hogg & Terry, 2002). Importantly, the functional antagonism or discontinuity between people's personal self and social self that is assumed with self-stereotyping implies that people's level of social identification is irreconcilable with individuality in the group. After all, when people self-define as prototypical group members, their personal identities shift to the background. Thus, following self-stereotyping principles, people's social identification should be based conformity to and similarity among prototypical group members. At the same time the role of the individual or individual differences should be negligible.

Without casting doubt on the relevance of self-stereotyping for social identification, I do have several arguments suggesting that self-stereotyping as a sole explanation for how people identify with groups may be somewhat one-sided. In particular, as will be outlined below, there are both theoretical and practical reasons to assume that being prototypical may not, and cannot always be the process explaining how people come to identify with ingroups, and that the role of the personal self may not always be negligible in social identification processes (see for similar viewpoints Hornsey & Jetten, 2004; Packer, 2008; Postmes, Spears, Lee & Novak, 2005).

Limitations to self-stereotyping – social identification link

First, self-categorization, and the associated process of self-stereotyping, is highly context-dependent and assumes that the social self is flexible, in the sense that how we self-define largely depends on the particular intergroup context that is salient at that moment. For example, when I am the only woman in a bar full of men, I most likely self-define in terms of feminine attributes, while when I am presenting my research at a conference intellectual attributes may be more self-defining. As such, self-stereotyping explains social identification in response to short-term changes in situational salience of social contexts. However, it does not explain long-term changes on how individuals gradually come to identify with a group, or how structural changes in our self-concepts emerge based on our group memberships (Abrams & Hogg, 2004; Amiot, de la Sablonniére, Terry, & Smith, 2007). Also, the fact that we take our unique, personal dispositions with us in different social situations is not taken into account with self-stereotyping (see also Ethier & Deaux, 1993). For example, in anticipation of new group membership (e.g., an adolescent planning to start studying medicine in a new city) people already show significant levels of identification with a new group (e.g., being a medicine student; Amiot et al., 2007) even though they are not yet a member, nor have they acquired substantial knowledge about ingroup norms and values. Such lack of knowledge on prototypical group characteristics implies that self-stereotyping can hardly account for how people identify with new groups. Thus sources for inferring mental self-ingroup overlap should be attained from elsewhere.

Building on the previous paragraph, it can be assumed that the process of self-stereotyping requires that clear group stereotypes are available to which group members can assimilate. Indeed, prior research has shown that in order for people to attain a depersonalized self-definition, the group's prototypes should be meaningful (Simon, Hastedt, & Aufderheide, 1997). However, often groups are complex and internally structured in terms of roles, subgroups and nested categories (Hogg, Abrams, Otten, & Hinkle, 2004). For example, think about the complex identity representation of the European Union or the ill-defined identity representation of a computer-based social network. Although prior research has demonstrated that people identify with groups lacking clarity on their identity content (Jetten, Hogg, & Mullin, 2000; Lickel et al., 2000, Study 2; Peker, Crisp, & Hogg, 2010), self-

stereotyping cannot convincingly account for how people come to identify with these types of groups.

Finally, despite the availability of a clear group prototype, the assimilation to such prototype may sometimes be undesirable for group members. Specifically, self-stereotyping assumes that people's group belongingness is based on perceived *similarity* to prototypical ingroup norms (Turner & Hogg, 1987; Turner, 1985), while it does not adhere to the idea that people in groups are also unique and different from each other (see also e.g., Vignoles, Chryssochoou, & Breakwell, 2000; Hornsey & Jetten; 2005; Postmes & Jetten, 2006). Therefore, self-stereotyping as a cognitive explanation for social identification levels may be particularly disadvantageous for those group members whose position in a diverse group is at odds with the dominant group's prototype, namely minority members. In diverse groups, members can typically be assigned to either a majority or minority subgroup (for example based on ethnicity, gender, or age). While, on average, majority members in diverse groups perceive themselves as prototypical group members, minority members perceive themselves as comparatively deviant from this prototype (Waldzus, Mummendey, Wenzel, & Boettcher, 2004). Such lack of a fit between the overarching group prototype and a minority members' subgroup position likely explains why minority members tend to identify less with diverse groups relative to majority members (Guillaume, Brodbeck, & Riketta, 2012). To date, an alternative cognitive explanation as to how people may identify with groups without necessarily relying on perceived similarity or prototypicality is still lacking. Hence, a better understanding of how people may be able to form a group bond, while being different from group prototypes is needed.

All in all, there is growing evidence for the notion that perceiving the self as a prototypical group member may not or cannot always form the basis for high social identification with an ingroup. However, an alternative cognitive explanation as to how people who do not conform to a norm identify with groups is currently lacking.

The role of self-anchoring as a cognitive route to social identification

In this dissertation I propose that aside from self-stereotyping, self-anchoring may also form a cognitive explanation for how people identify with ingroups. To the best of our knowledge, the link between self-anchoring and social identification has not been investigated in prior literature, nor has it been integrated with self-stereotyping research. Thus, the first goal in this dissertation is to empirically test the

link between self-anchoring and social identification. Secondly, the goal is to integrate self-anchoring and self-stereotyping in one research paradigm, and compare them on their distinct impact people's level of social identification. Importantly, adding self-anchoring to the already existing self-stereotyping principles to explain social identification enriches our current theories on social identity (Tajfel & Turner, 1979) and self-categorization (Turner et al., 1987). Specifically, rather than assuming that similarity within and differentiation between groups (i.e., meta-contrast) forms *the* cognitive basis for social identification, I suggest that with self-anchoring people may form a bond with the group that allows for inter-individual differences within groups. Practically, this may offer room for explaining how people identify with more complex, diverse groups. Therefore, a third goal in this dissertation is to show that self-anchoring may form an important explanatory process in how people identify with groups in which information on prototypes is either unavailable, unclear, or at odds with one's subgroup membership. I will elaborate on the reasoning behind this third goal below.

Self-anchoring is the process in which people rely on their personal self as an informational basis to infer mental overlap between themselves and the group (Cadinu & Rotbart, 1996). Importantly, such approach to create mental overlap does not depend on the availability of group knowledge (as self-stereotyping does) but on the representation of the *personal self*. More precisely, as everyone has a personal self at his/her disposal, this allows to fill in cognitive gaps in a group's identity representation, and in turn to create a meaningful group identity representation.

Building on this notion, I propose that in group contexts in which knowledge on group prototypes is unavailable, self-anchoring may be the cognitive process facilitating social identification. Prior literature has demonstrated that the more cognitive gaps there are in a group's identity representation (i.e., the more ill-defined a group's prototype), the stronger the tendency to self-anchor (Robbins & Krueger, 2005). Also, a recent developmental model on how social identities become an integrated part of the self suggests that in case of new group membership, people a quite unfamiliar with the ingroup's norms and values, and might therefore use their personal self as a source of information to infer a group bond with the new group (Amiot et al., 2007). While this illustrates the importance of the personal self as a source of inference in ill-defined groups, to date it is unknown whether it is indeed self-anchoring that can explain people's level of social identification in these groups. In this dissertation I therefore investigate whether in unclearly defined or new groups,

self-anchoring facilitates social identification, while self-stereotyping does so in clearly defined or well-known groups.

Moreover, as stated previously, self-stereotyping denotes that group membership is based on being a prototypical group member, resulting in perceived similarity among ingroup members (Oakes et al., 1994). Yet similarity is clearly not what characterizes diverse groups. Particularly for minority members in diverse groups (who are generally perceived as non-prototypical group members) it can be expected that assimilation to prototypical group norms hinders the creation of a group bond and sense of inclusion. I propose that self-anchoring de-emphasizes the focus on being a prototypical (i.e., majority) or non-prototypical (i.e., minority) group member, and shifts it to the individual in the group instead. Prior research has shown that in diverse, superordinate groups, people project personal attributes to the higher order superordinate category almost as strongly as they project to subcategories (Krueger & Clement, 1996; Krueger & Zeiger, 1993; Krueger & Didonato, 2008). This projection of personal attributes to the superordinate, diverse group, means that subgroup boundaries are crossed when creating a mental self-ingroup bond in a diverse group. This may have positive implications particularly for how minority members' social identification with a diverse group can be facilitated. Furthermore, considering its emphasis on the individual (rather than on similarity) self-anchoring may also have implications for people's general appreciation of diversity as part of a group's identity representation.

Summary and overview of the chapters in this dissertation

Following from the preceding literature overview and its noted gaps, the central aim of this dissertation is to provide a cognitive framework for how people identify with groups. Specifically, I propose that not only self-stereotyping but also self-anchoring facilitates people's level of identification with an ingroup. Such proposition implies that people may identify with an ingroup based on both the assimilation of the self to group prototypes (i.e. self-stereotyping) as well as the projection of individual characteristics of the self onto the group (i.e. self-anchoring). Hence, inferring mental overlap based on both the social, and the personal self may function as cognitive means to the same end. Secondly, I propose that the relative impact of self-anchoring and self-stereotyping as cognitive routes to social identification is dynamic: which route works best may depend on the properties of

group at stake. Specifically, the moderating role of group clarity (clear versus unclear group identity), time (newcomer versus full-fledged group member) and group diversity (majority versus minority position) on the predictive power of self-anchoring relative to self-stereotyping for social identification is investigated (see Figure 1.1).

In this dissertation, studies are reported that were designed to investigate self-stereotyping and self-anchoring as cognitive routes to social identification in different types of groups. The chapters in this dissertation are based on research that was conducted in collaboration with several others. Therefore, the term 'we' (instead of 'I') is used throughout this dissertation. In addition, the six chapters of this dissertation are based on individual papers that have been published or submitted for publication. Each chapter can therefore be read separately. As a consequence, the content of some chapters may overlap to some extent.

Chapter 2: Two cognitive routes to social identification

In Chapter 2, self-stereotyping and self-anchoring are investigated within one research paradigm and tested regarding their distinct impact on social identification. Herewith, we aim to complement the classical *self-stereotyping* approach to social identification (SIT: Tajfel & Turner, 1979; SCT: Turner et al., 1987) by investigating *self-anchoring* (Cadinu & Rothbart, 1996) as an additional cognitive route to social identification. Study 1 provides first evidence for this positive link between self-anchoring and social identification. Study 2 adds self-stereotyping to the model and shows that self-anchoring is still positively related to social identification when controlling for self-stereotyping. This indicates that both the social and the personal self can play a crucial role in social identification processes

Additionally, in this chapter the impact of *self-concept stability* on self-anchoring and self-stereotyping was examined. Self-concept stability indicates the extent to which people perceive to have a clear sense of who they are, which is stable across social situations. The expectation was that if the personal self is used as a cognitive tool to infer ingroup characteristics, such cognitive tool should be stable and clearly defined (see also Krueger, 2007). The findings confirmed that self-concept stability was positively related to self-anchoring, and hence to social identification (Study 1), independently from self-stereotyping (Study 2). In the discussion, we argue that disentangling self-anchoring from self-stereotyping is important as it increases our

insight in how people identify, and how this may depend on differences in the self-concept.

Chapter 3: Social identification when an ingroup identity is unclear

Chapter 3 builds on the prior findings from Chapter 2, and investigates how people identify with groups that vary in their level of group *clarity*. A group is clearly defined when there is unequivocal available knowledge about its identity content, while a group is unclearly defined when there is no clear-cut knowledge available about the meaning of its identity content. For example, while religious groups may have very clear group norms and values, creative work teams may not have such clear group prototypes. We argue that self-stereotyping as a cognitive route to identification is most plausible in clearly defined groups. When knowledge on group prototypes is available, there is a clear opportunity to assimilate the self to group norms. In contrast, when a group is unclear in terms of its identity content there is little norm to conform to. We argue in this situation *self-anchoring* (i.e., projection of personal self onto group) accounts for identification: here personal self can be used to fill in the cognitive blanks in a group's representation. In line with these hypotheses, two studies (Study 1: minimal group; Study: 2 real group) revealed that *self-anchoring* positively predicted the level of social identification in groups with an unclear, but not a clear group definition. Conversely, *self-stereotyping* positively predicted the level of social identification in groups with a clear, but not an unclear group definition. Together, these findings reveal the dynamic impact of self-anchoring and self-stereotyping on identification: it depends on the type of group which process works best to identify with groups.

Chapter 4: Newcomers' cognitive development of social identification

Chapter 4 demonstrates that how people identify with groups also varies when developing from a newcomer to a well-established group member. Here, we introduce another group context moderator explaining the differential impact of self-anchoring and self-stereotyping on identification: *Time*. Building on Chapter 3, we argue that since new group members have very little knowledge on their new group's typical norms and values, the personal self may be used as a cognitive tool to define

the group. Over time, however with accumulating knowledge on the group's identity, the assimilation to group prototypes may become more important. Hence, we hypothesize that among newcomers self-anchoring positively impacts on social identification, while self-stereotyping does not. Over time, we hypothesize self-stereotyping to become a significant predictor of identification. In a longitudinal study, we measured first year psychology students' self-anchoring, self-stereotyping and social identification in the first month of their studies (T1) and after approximately seven months, when the socialization phase had ended (T2). Results on cross-sectional and longitudinal analysis confirmed that among newcomers self-anchoring was more positively associated to social identification than self-stereotyping. In contrast, among well-established group members self-stereotyping instigated social identification for well-established group members.

Chapter 5 & 6: Self-group relation among minority and majority members in diverse groups.

The last empirical section of this dissertation concerns an application of self-anchoring and self-stereotyping in a more complex, diverse group setting. Specifically, we focus on how minority and majority subgroup members' self-anchoring and self-stereotyping impact on their identification with the superordinate, diverse group. The general assumption here is that a cognitive strategy to infer self-ingroup overlap based on conformity to group norms (i.e., self-stereotyping) may hinder identification and openness to diversity compared to a cognitive strategy focusing on the personal self in the group (i.e., self-anchoring). We test this assumption in two chapters: Chapter 5 stresses the differential impact of self-anchoring and self-stereotyping on *minority* members' social identification with a superordinate group. Chapter 6 focuses on *majority* members and shows how self-anchoring and self-stereotyping differentially contribute to their openness to diversity and attitudes towards minority members in a superordinate group.

Chapter 5: A personal touch to diversity: Minority members' identification with diverse groups. In superordinate groups, minority members often indicate lower levels of identification than majority members. From a social-cognitive perspective we compare how *self-stereotyping and self-anchoring* impact on minority and majority members' identification in a superordinate group. In a 2x3 design, participants were

randomly assigned to a majority or minority subgroup position based on gender in a diverse virtual team in the lab. Subsequently self-anchoring and self-stereotyping were manipulated via mindset priming, and a control condition was added to compare results against a base rate. Finally, social identification with the team was measured. Findings revealed that only for minority, but not majority members self-anchoring led to higher identification compared to self-stereotyping. Hence, focusing on the personal self in shaping a cognitive relation with a group enables minority members to belong while being different.

Chapter 6: Enhancing majority members' pro-diversity beliefs. While for majority members, both self-anchoring and self-stereotyping seem equally successful routes to identify with a diverse group, the question remains whether there are different consequences for their openness towards diversity and their attitudes towards minority members. In general, majority members tend to be skeptical about perceiving diversity as valuable. In this chapter we investigate how majority members' perceived value in diversity may vary in response to the two cognitive projection strategies to create self-group overlap, self-stereotyping and self-anchoring. In two studies (Study 1: scenario study; Study 2: real group study) we manipulated projection via mindset-priming among ethnic majority members in a diverse team. As in Chapter 5, results showed that both self-anchoring and self-stereotyping led to similar levels of social identification. Importantly, relative to self-stereotyping, self-anchoring increased majority members' perceived value in diversity and positive attitudes towards minority team members.

Chapter 7: A Cognitive Dual-pathway Model to Social Identification

Chapter 7 consists of a review article integrating self-stereotyping and self-anchoring literature in one model to explain how people identify with groups. This chapter integrates the preceding empirical chapters in this dissertation, and embeds them in a larger theoretical framework. In particular, this review provides a theoretical overview of research from which it becomes clear that, thus far, self-anchoring and self-stereotyping have lived relatively separate lives in the literature and have even been debated for their relative dominance in creating self-group overlap. We propose that neither self-anchoring, nor self-stereotyping is in principle a more relevant process in creating a group bond. Rather, we will outline that the mixed evidence on

the relative importance of self-anchoring or self-stereotyping can be largely attributed to (1) methodological inconsistencies in the measurement of both processes and (2) differences in the type of group context both processes were investigated in. To this end, we provide methodological criteria to properly measure and compare self-anchoring and self-stereotyping as cognitive routes to identification. Based on this, we introduce the Cognitive Dual Pathway Model to Social identification (see Figure 1.1). We conclude this chapter and this dissertation by discussing future research avenues on how intra- and intergroup research would profit from a dual approach (taking into account both the social and the personal self) to social identification processes.

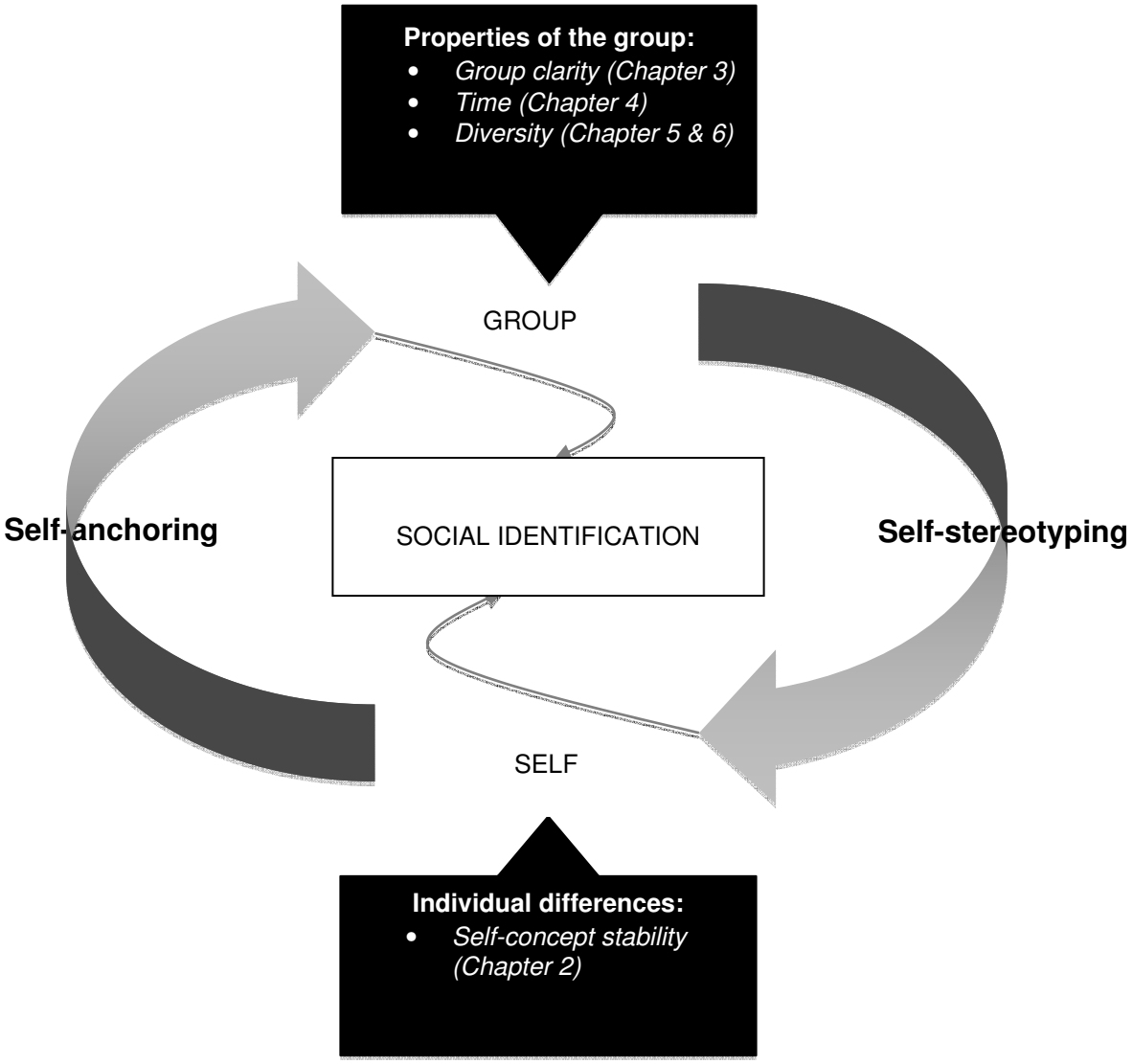


Figure 1.1:
Cognitive Dual Pathway Model to Social Identification (see also Chapter 7)

Chapter 2

Linking Self and Ingroup: Self-anchoring as Distinctive Cognitive Route to Social Identification[1]

Abstract

The present paper investigates how cognitive projection processes instigate social identification. We complement the classical self-stereotyping approach (i.e. conforming to prototypical group norms) by investigating self-anchoring (i.e. projection from self to group) as a distinct cognitive route to social identification. Self-anchoring has mainly been investigated as predictor of intergroup differentiation. Surprisingly, no reliable link has been provided yet between self-anchoring and social identification. In Study 1 we provide first evidence for this positive link. In Study 2 we add self-stereotyping to our model and show that self-anchoring is still positively related to social identification when controlling for self-stereotyping. Additionally, we show that self-anchoring is positively related to affective components of identification, while self-stereotyping is positively related to cognitive components. Moreover, we examined the impact of self-concept stability on self-anchoring. Self-concept stability was positively related to self-anchoring, and hence to social identification (Study 1), independently from self-stereotyping (Study 2). In the discussion we argue that disentangling self-anchoring from self-stereotyping is important as it increases our insight in how people identify, and how this may depend self-concept and the kind of group.

[1]This chapter is based on: Van Veelen, R., Otten, S., & Hansen (2011). Linking self and ingroup: Self-anchoring as distinctive cognitive route to social identification. European Journal of Social Psychology, 41, 628-637. doi:10.1002/ejsp.792

Affiliation with groups is an innate human need. Without social connectedness, people become prone to aversive states like mental and physical illness, and behavioral problems ranging from lying and stealing to even suicide (Baumeister & Leary, 1995). Thus, social identification with groups is essential, not only for individual's well-being, but also for group functioning in general (for an overview see e. g., Haslam, Van Knippenberg, Platow, & Ellemers, 2003). To encourage and stimulate identification, it is important to know how individuals identify with groups. In this paper we take a cognitive approach in trying to answer this question, starting from the assumption that the psychological basis for identification is the self − the personal or the social self.

Social identification implies the presence of perceived mental overlap between self and group (Smith & Henry, 1996). More overlap between self and group instigates higher levels of social identification (Coats, Smith, Claypool, & Banner, 2000; Tropp & Wright, 2001; 2003). Classical social identity theorists argue that mental overlap emerges by projecting prototypical group characteristics on the self (i.e., *self-stereotyping*). In this case, the psychological basis for identification is the activation of the social self, while the personal self shifts to the background. However, one can easily conceive groups which lack clear prototypes such as new, complex or diverse groups. Moreover, even groups clearly defined on one dimension (i.e., 'Psychologists are emotionally intelligent') often lack a clear definition on other dimensions (i.e., 'Are psychology students creative?'). In such cases it seems difficult to activate a social self due to a lack of group prototypes. Therefore, we argue that in addition to the social self, the personal self can also be a basis for social identification. In this case mental overlap emerges by projecting personal characteristics on the group (i.e., self-anchoring).

Self-anchoring (or, more generally stated, social projection[1]), has mainly been studied as a judgmental heuristic that can account for intergroup differentiation (e.g., Robins & Krueger, 2005). However, to date self-anchoring has not yet been thoroughly investigated to understand its impact on social identification with one's own groups. Therefore, we investigate this link and, importantly, we empirically distinguish the impact of self-anchoring on social identification from self-stereotyping processes. To the best of our knowledge, such an empirical test has not yet been provided. The present paper aims to fill this gap by investigating how self-anchoring can provide a distinct cognitive route to social identification, independently from self-stereotyping. Additionally, we also investigate how variations in the stability of the self-concept influence the extent to which people self-anchor in order to facilitate social identification.

Self-stereotyping and self-anchoring

Self-stereotyping has been studied extensively within social psychology. Following from Social Identity Theory (SIT; Tajfel & Turner, 1979) and Self-Categorization Theory (SCT; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), self-stereotyping has traditionally been seen as *the* crucial process explaining how mental overlap between self and group emerges and hence, how individuals identify with groups. According to SCT, the social self and a personal self exist at opposing ends of the same continuum. When individuals identify with a group, the social self becomes salient and the personal self shifts to the background, or depersonalizes. As a consequence, individuals will describe themselves in terms of prototypical group characteristics and will "… view themselves as interchangeable exemplars of the social category, rather than unique personalities defined by their individual differences from others" (Turner et al., 1987, p. 50). Thus, based on self-stereotyping principles, social identification should in the first place, refer to an overlap between self and group with respect to socially shared, prototypical group characteristics rather than to characteristics of the individual self.

More recently self-anchoring has been introduced to the literature on (inter-) group processes. In contrast to self-stereotyping, self-anchoring is the process of defining the ingroup in terms of personal attributes. Self-anchoring was described by Cadinu and Rothbart (1996) as a process that can account for ingroup favoritism. They suggested that in some group situations, specifically the Minimal Group Paradigm (MGP; Tajfel, Billig, Bundy, & Flament, 1971), self-stereotyping can hardly be the cognitive process accounting for a mental overlap between self and group, because there are no pre-established group prototypes available. In an MPG individuals are arbitrarily categorized into groups about which no prior knowledge of prototypical group characteristics exists. Nevertheless, even minimal ingroups are perceived as more favourable than outgroups (Otten & Wentura, 2001). According to Cadinu and Rothbart (1996), this ingroup favouritism is largely based on self-perception. People generally possess favourable beliefs about themselves, which they use to infer ingroup characteristics from. This bottom-up process of projecting the self onto the group (i.e., self-anchoring) enables people to positively distinguish their ingroup from outgroups.

Recently self-anchoring was also demonstrated for well-established groups (Otten, 2004; Otten & Epstude, 2006). Real groups often lack clear prototypical characteristics, and are internally structured in terms of roles, subgroups, nested categories and complex, diverse representations (Hogg, Abrams, Otten, & Hinkle, 2004). In these groups, the self can be used as an anchor to fill the cognitive gaps in the group's representation. Self-anchoring is thus not restricted to minimal or novel groups, but also relevant in real group settings. Nonetheless, a recent meta-analysis on self-anchoring literature showed that in general, projection from self to group is stronger in laboratory settings compared to real group settings (Robbins & Krueger, 2005). These findings support the idea that in laboratory settings, the only source of information about the group is the self (as being part of the group), while in real groups both knowledge about the self and group stereotypes are available. Thus, in contrast to laboratory settings, in real group settings mental overlap can reflect both the process of self-anchoring and self-stereotyping.

Recent developments in the disentanglement of self-anchoring and self-stereotyping processes show that, in general, group judgments based on clearly defined self-descriptions (i.e., self-anchoring) are made faster compared to self-judgments based on clearly defined group-descriptions (i.e., self-stereotyping; Didonato, Ulrich, & Krueger, 2010; Otten & Epstude, 2006). This finding is often interpreted as evidence for a stronger prevalence of self-anchoring compared to self-stereotyping (Krueger, 2007; Robbins & Krueger, 2005). In contrast, other research shows that self-stereotyping is more profound than self-anchoring, specifically in intergroup contexts (Guimond, Chatard, Martinot, Crisp, & Redersdorff, 2006) and in low status groups (Latrofa, Vaes, Cadinu, & Carnaghi, 2010). In sum, there is an ongoing debate about the importance of self-anchoring versus self-stereotyping in the literature on mental overlap between self and group. Our research contributes to this debate because we argue that both self-anchoring and self-stereotyping can occur simultaneously within an individual, and that both can contribute to the emergence of mental overlap between self and group. Specifically we focus on disentangling self-anchoring from self-stereotyping within-subjects, to investigate its distinct impact on social identification.

Self-anchoring and social identification

One of the most robust findings in the literature on self-anchoring is that projection from self to group is stronger for the ingroup than outgroups (Robbins & Krueger, 2005), which results in more ingroup favouritism (Cadinu & Rothbart, 1996; Clement & Krueger, 2002; Otten & Wentura 1999, 2001; Gramzow, Gaertner, & Sedekides, 2001), and more cooperation with ingroup members compared to outgroup members in social dilemma games (Krueger, 2007). Furthermore, thus far projection from self to group has been mainly viewed as a primarily "cold" cognitive process – it can operate without awareness or effort, does not require intentions and does not respond well to attempts at curbing it (Gramzow et al., 2001; Krueger, 2007; Otten, 2002). From this perspective, self-anchoring occurs automatically; to the extent that the self is perceived as being part of the social category, it is used as a heuristic to define the ingroup. In contrast, when the self is not part of the social category the self does not serve as source of information (Otten, 2002), or at least to a lesser extent (see Didonato et al., 2010; Krueger & Didonato, 2008, for a review on self-anchoring in crossed categorizations).

We propose however, that self-anchoring is not merely a "cold" cognitive process to organize and define the self in a complex social world (i.e., intergroup differentiation), but that self-anchoring can also indicate the extent to which people positively affiliate with groups. More specifically, we expect that, besides enhancing perceived similarity between self and group, self-anchoring can also predict positive feelings about ingroup memberships and a sense of bonding with the ingroup.

To the best of our knowledge, so far there is no unequivocal evidence for a direct link between self-anchoring and social identification. There are a few studies showing that perceived mental overlap between self and group is positively related to social identification (Cadinu & De Amicis, 1999; Coats et al., 2000; Tropp & Wright, 2001, 2003). However, these studies do not distinguish self-anchoring from self-stereotyping as distinct process related to social identification. Furthermore, in these studies there was no focus on differentiating between different aspects of social identification, such as cognitive and affective aspects. Therefore, the question arises whether self-anchoring can account for the level of identification in groups, distinctively from self-stereotyping processes, and whether it specifically relates to certain aspects of identification. The present research is set out to show that social identification does not only rest upon conformity to prototypical ingroup norms, but can also be based on the personal self (see also Postmes & Jetten, 2006; Sedikides & Brewer, 2001).

Self-concept stability and self-anchoring

When engaging in self-anchoring, the self is used as a cognitive tool to deal with judgmental ambiguity concerning a group's definition. The use of such a tool necessitates that the judgmental anchor is well-defined and diagnostic, rather than ambiguous. Thus far, research on projection from the self to the group has been based on the assumption that a person has access to a rather stable self-concept (Krueger, 2007). There is, however, an extensive amount of literature showing that people differ strongly in the stability and certainty of their self-concepts. Whereas some individuals view themselves in a fairly consistent and clear fashion, others are more influenced by the surrounding context (e.g., Donahue, Robins, Roberts, & John, 1993; Markus & Kitayama, 1991; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997). Therefore, in the present research we investigate the impact of self-concept stability on self-anchoring, arguing that people with stable self-concepts self-anchor more and hence identify more via this process.

Traditionally, the theoretical framework of self-concept stability is embedded in Swann's (1990) self-verification theory (Kernis & Goldman, 2005). Accordingly, self-concept stability can be defined as the extent to which people's self-concepts are firmly formed and maintained using a wide variety of cognitive and behavioral strategies. It implies that people have the cognitive resources (i.e., sufficient self-knowledge) and motivation to access their self-concepts and compare information in their social worlds with existing self-representations (Kernis & Goldman, 2005). Different from self-concept clarity (Campbell, Trapnell, Heine, Katz, Lavallee, & Lehman, 1996), self-concept stability does not necessarily relate to self-esteem or self-enhancement (Kernis, 2003). For example, one could have a stable notion of oneself as being a 'rigid', but at the same time not gain high self-esteem from this trait. The stability of the trait at the personal level may however still result in an overestimation of the amount of rigidity in the ingroup. We consider a stable self-concept as a self-definition which is stable and accessible in different contexts, combined with a willingness to express this self-concept in interactions with different people.

Self-concept stability has been investigated in both the area of cross-cultural and personality psychology. For example, English and Chen (2007) recently showed that Asian Americans were less consistent in their self-descriptions across relationship contexts than were European Americans. Furthermore, within personality psychology,

a recent review article explicated how people with high self-concept stability have more broadly defined self-views, activated in a wide range of contexts and lending greater stability of self-evaluations (Showers & Zeigler-Hill, 2007). Importantly, Showers and Zeigler-Hill (2007) specifically claim that the relationship between self-constructs and social identities in terms of their content and causal relationship remains an open area for research.

There are only a few studies investigating the impact of the self-concept on self-anchoring, which leaves the field of individual differences in self-anchoring relatively unexplored. Clement and Krueger (2002) were one of the first to hypothesize that there are individual variations in the extent to which people self-anchor, but they did not provide empirical evidence for this claim. Otten and Bar-Tal (2002) however, found that individuals with high need and ability for cognitive structure relied most strongly on the self as a heuristic for ingroup evaluations. Also, Amit, Roccas and Meidan (2010) showed that people with conservation values engage in more self-anchoring. To our knowledge, there is no study investigating the impact of self-concept stability on self-anchoring. Therefore, we would like to add to previous research, by showing that when people have a stable self-concept, the diagnostic value of the self is strong and therefore the self is more extensively used as an anchor to identify with one's ingroups. Furthermore, we expect that self-concept stability exclusively influences self-anchoring as a means to identify with a group, and not self-stereotyping. According to SCT, the personal self depersonalizes with self-stereotyping. Therefore self-concept stability should have less – if any – influence on this process.

The present research

The current research is set out to investigate two main hypotheses. First, we hypothesize that self-anchoring is a distinct cognitive route to social identification, independently from self-stereotyping. We also distinguish between an affective and cognitive component of social identification. Even though we do not have a specific hypothesis, for explorative reasons we are interested in how self-anchoring and self-stereotyping impact on both aspects of social identification separately. Secondly, we hypothesize that self-concept stability influences the extent to which people self-anchor in order to identify with groups, while we do not expect an influence on self-stereotyping. In Study 2.1 we investigate the relationship between self-anchoring and

social identification among psychology students, and we test our prediction that self-concept stability is positively related to self-anchoring and consequently to social identification. In Study 2.2 we add self-stereotyping to our model in order to show that self-anchoring is a distinct cognitive route to social identification, independently from self-stereotyping. Moreover we replicate our finding that self-concept stability is positively related to self-anchoring, but reveal that it has no impact on self-stereotyping.

Study 2.1

Method

Participants and design. One hundred and twenty-four psychology students (102 women, 22 men) with an average age of 20.51 years (*SD* = 4.02) participated in a computer-based study and received course credits in return. The study was correlational, measuring self-concept stability, self-anchoring, and social identification with psychology students.

Procedure and materials. Below, we report the procedure and the measures in the order in which they appeared in the study. Before the start of the study, participants were told that they would participate in a study on how personality influences self-perception.

Self-ratings. First, participants rated 25 traits on applicability to the self on a Likert-scale ranging from 1 (not at all applicable to me) to 9 (completely applicable to me). The traits were selected from a pilot study (see below, construction self-anchoring score).

Self-concept stability. Secondly, participants filled out a self-concept stability scale based on four items (e.g., 'I act the same way no matter who I am with', 'I prefer to be direct and forthright when dealing with people I've just met'; $\alpha = .60$) measured on a 7-point scale ranging from 1 (not at all) to 7 (very much). To our knowledge there is no scale of self-concept stability in social context developed yet. Therefore our own scale is based on prior pretesting of items taken from the independence scale by Singelis (1994). Singelis refers to an independent self as being (a) unique, (b) being stable in different social situations and (c) realizing internal

attributes and promoting one's own goals. For our purposes, we considered the last two components most applicable to the self-concept stability scale, given that the definition self-concept stability implies that people have cognitive resources and motivation to access their self-concepts (Kernis & Goldman, 2005). The uniqueness component, however, should not contribute to self-concept stability, nor to self-anchoring, as people feeling highly unique should not be especially prone to project their personal selves on an entire social category. A pilot study including the independence scale (Singelis, 1994) and a measure of self-anchoring confirmed this reasoning[2].

Group ratings. Subsequently, participants rated the same 25 traits previously evaluated for the self with respect to their applicability to psychology students on a 9-point scale ranging from 1 (not at all applicable to psychology students) to 9 (completely applicable to psychology students).

Social identification. Finally, participants filled out an identification questionnaire consisting of 9 items (α = .89) from the multi-component ingroup identification scale from Leach et. al., (2008). Seven items reflected the affective relationship with the group, based on the satisfaction and solidarity subcomponents of the scale (α = .88; e.g., 'I feel a bond with psychology students'. Two items reflected the cognitive relationship with the group, based on the individual self-stereotyping component of the scale (r (124) = .73, p <.001; e.g., 'I am similar to the average psychology student'). Responses were measured on a 7-point Likert-scale ranging from 1 (not at all applicable) to 7 (very applicable).

Construction of self-anchoring score. Self-anchoring scores were based on the 25 trait ratings on the self and group. Earlier research on self-anchoring has typically relied on minimal groups. In the Minimal Group Paradigm, social identities cannot be derived from pre-existing knowledge of the group. Hence, the overlap between self and group can only be inferred from knowledge of the self rather than vice versa (Gramzow et al., 2001; Otten, 2005). However, in the present study we focus on a real group. Judgments of real groups can be based on knowledge stemming from other sources than the self (e.g., stereotypes). This knowledge might interfere with the diagnostic value of the self. Therefore, finding a method to distinguish self-anchoring from self-stereotyping measures in real groups is a challenge (Otten & Epstude, 2006).

To be able to measure self-anchoring (and not self-stereotyping), self-group overlap was measured using trait ratings which were, according to an independent pilot study, non-stereotypical for the group psychology students. By focusing on traits

which are clearly defined for the self but are ambiguous with respect to their applicability to the group, projection from self to group can be measured most accurately (Otten & Epstude, 2006; Otten, 2004). Secondly, trait ratings on the self were measured prior to making the social category salient, to avoid that the self-ratings could already be affected by self-categorization as psychology student. Finally, again based on a pre-test, we only used traits neutral in terms of valence, to avoid that self-group overlap could also emerge due to valence bias. When using positive traits, overlap might not emerge from projection from self to group, but just because positive traits are generally rated as more applicable for both self and ingroup. Therefore, based on the pre-test, only those traits perceived as neutral in terms of valence were included. Example traits are 'musical' and 'sportive' (see Appendix for the trait list).

Self-anchoring was measured using profile correlations (Otten & Wentura, 2001). For each participant we calculated the correlation between self and group ratings, while controlling for popularity of the item (Krueger, 2008). We controlled for this because a correlation between self and group ratings might not only stem from projection from self to group, but also from the general popularity of the item (De la Haye, 2000; Clement & Krueger, 2002). Item popularity was calculated as the proportion of subjects who had answered positively on an item (6-9 on the Likert scale). The partial correlation between self and group ratings, while controlling for popularity, was used as measure of self-anchoring. Higher scores indicate more self-anchoring.

Results and discussion

Descriptive statistics are depicted in Table 2.1. Self-anchoring scores are based on the average correlation between self and group ratings, thus they can vary between -1 and 1. The average self-anchoring level (M = .26, SD = .35) is significantly above the midpoint of the scale, t (122) = 8.43, p<.001, indicating that overall self-group ratings are positively associated.

Correlational analysis. As predicted, there was a significant positive correlation between self-anchoring and social identification; stronger projection from self to group was associated with higher levels of social identification. Furthermore, self-

anchoring was significantly and positively related to both affective and cognitive components of social identification. In line with our expectations, we also found a significant positive correlation between self-concept stability and self-anchoring (see Table 2.1).

Table 2.1
Summary of correlations, means, and standard deviations for all variables in Study 2.1 (N=124).

	M	*SD*	1.	2.	3.	3.1	3.2
1. Self-anchoring	.26	.35	1	.21*	.36**	.31**	.35***
2. Self-concept Stability	4.26	1.04		1	.12	.11	.10
3. Social Identification	4.77	.82			1	.96***	.73***
3.1 affective component	5.05	.83				1	.53***
3.2 cognitive component	3.81	1.19					1

***$p < .001$ **$p < .01$ *$p < .05$

Indirect effects. In a next step, we examined whether the positive relationship between self-anchoring and social identification is especially facilitated for participants with high self-concept stability. There is no obvious theoretical rationale to predict a direct link between self-concept stability and social identification. Therefore we tested for indirect effects; in contrast to classical mediation analysis (Baron & Kenny, 1986), indirect effect testing does not require the presence of a direct effect from X to Y (Preacher & Hayes, 2004; Holmbeck, 1997). Specifically, Shrout and Bolger (2002) argue that an indirect effect testing is especially applicable in case of testing a distal process, because the effect is transmitted through additional links in the causal chain. In line with this reasoning, we do not assume that self-concept stability necessarily relates to social identification, but rather, that this relationship is transmitted through self-anchoring: to the extent that people with stable self-concepts use the self more as a heuristic tool to define their ingroup, this will also lead to more identification. Therefore, we investigated this indirect effect following the procedure by Preacher and Hayes (2004).

Bootstrapping (5000 iterations) revealed that the overall model was significant, R^2 = .12, F (2, 120) = 8.91, p <.001. As already evident from the correlational analysis, self-concept stability was positively related to self-anchoring, b = .07, t (122) = 2.33, p <.05. Furthermore self-anchoring was strongly positively related to social identification, b = .80, t (122) = 3.99, p<.001. The direct effect of self-concept stability on social identification was not significant, b = .09, t (122) = 1.29, p =.20. Most importantly, the indirect path via self-anchoring was significant; with a 95 % bias corrected and accelerated confidence interval from .014 to .134[3]. We also tested indirect effects for the affective and the cognitive components of identification separately. Bootstrap results (5000 iterations) revealed similar results for both affective (confidence interval: LB = .010; UB = .121) and cognitive components of identification (confidence interval: LB = .019; UB = .183).

In sum, the results from Study 2.1 confirmed our hypothesis that self-anchoring is positively related to social identification. Specifically, we found first evidence that besides merely enhancing perceived similarity between self and group (i.e., the cognitive component of identification), self-anchoring can also predict positive feelings about ingroup memberships (i.e., the affective component of identification). Moreover, as predicted we found that self-concept stability predicted self-anchoring, which subsequently led to more social identification.

Study 2.2

Study 2.2 was set out to replicate our findings from Study 1 and more importantly, to include self-stereotyping in our model, thereby showing that self-anchoring can independently from self-stereotyping account for in the level of social identification. Additionally, we investigated whether self-anchoring and self-stereotyping have a different impact on the affective and cognitive aspects of social identification

Method

Participants and design. Two hundred and two psychology students (156 women, 46 men) with an average age of 19.40 years (*SD* = 1.86) participated in a computer-based study and received course credits in return.

Procedure and materials. The procedure of Study 2.2 strongly resembled Study 2.1, only this time self-stereotyping was added to the model. Again, we report all measures in the order in which they appeared in the study.

Self-ratings 1. Participants first rated the same 25 non-stereotypical traits as in Study 2.1 on their applicability to the self (self-ratings/time 1).

Self-concept stability. Secondly, self-concept stability was assessed with the four items from Study 1 (α = .62).

Group-ratings. Subsequently, participants rated the 25 ambiguously defined traits previously rated for the self (time 1) on their applicability to psychology students. Different from Study 2.1 however, participants also rated 25 traits which were, according to a pilot study, stereotypical for psychology students, but again, neutral in valence. Examples of stereotypical traits for psychology students were 'sensitive' and 'social' (see Appendix for trait list). In total, all 50 traits were offered in random order.

Self-ratings 2. After the trait ratings on the group, participants filled out some filler questions. Subsequently they were asked to rate the self again, but now on the 25 traits stereotypical for psychology students, allegedly for technical reasons (self-rating/time 2). We based our self-stereotyping score on the group and self-ratings/time 2 of the stereotypical trait dimensions (see construction projection scores).

Social identification. Again, as in Study 2.1, participants filled out the 9-item measure of social identification (α = 82). Seven items reflected the affective component (α = .83) and two items reflected the cognitive component (r (202) = .78, p <.001).

Check trait stereotypicality. At the end of the questionnaire we also asked participants to indicate to what extent they thought all 50 traits were stereotypical for psychology students. Herewith, we double-checked whether our pilot tested traits were also either ambiguous or stereotypical for psychology students in this sample. Based on this check we excluded two traits because they did not confirm the pilot test results (see construction projection scores).

Construction of projection scores. The procedure to construct a self-anchoring score was the same as in Study 2.1; we calculated profile correlations between self-ratings (time 1) and group-ratings on 24[4] traits, ambiguously defined for the group (Otten & Wentura, 2001), controlling for item popularity. For self-stereotyping we followed the same procedure, only this time we used profile correlations between 24[5] stereotypical trait ratings on the group and on the self (self-ratings/time 2). Self ratings on stereotypical traits were deliberately measured after the group category was made salient (self-ratings/time 2), in order to make sure that the group was readily available as a heuristic to define the self. This procedure is similar to a measurement of self-stereotyping used by Latrofa et al., (2009). They showed that self-stereotyping was most prevalent when it was based on stereotype-relevant rather than irrelevant traits, and when group ratings preceded self-ratings. Again, we calculated profile correlations, controlling for item popularity, to rule out the possibility that self-stereotyping scores would partly be biased due to valence of stereotypical traits. This procedure allowed us to measure the extent to which participants project stereotypical group characteristics on the self, which is the opposite from self-anchoring. Higher scores indicate higher levels of projection.

Results and discussion

Descriptive statistics are depicted in Table 2.2. Self-anchoring, t (199) = 10.75, $p < .001$ and self-stereotyping scores, t (201) = 12.32, $p < .001$ are significantly above the midpoint of the scale, indicating that for both measures the self and group ratings are positively associated. Furthermore, in contrast to previous research (Didonato et al., 2010; Guimond et al., 2006; Latrofa et al., 2010; Otten & Epstude, 2006), there were no significant differences between the average level of self-anchoring and self-stereotyping, t (199) =1.27, p= .21.

Correlational analysis. In line with our expectations, we found a significant positive correlation between social identification and both self-anchoring and self-stereotyping (see Table 2.2). Furthermore, both affective and cognitive components of identification correlated positively with self-anchoring and self-stereotyping. Because we were interested in the distinctive predictive power of both self-anchoring and self-stereotyping on social identification, we first calculated a partial correlation between self-anchoring and social identification, controlling for self-stereotyping. In line with

our expectations, this correlation was significant, r (197) =.21, p <.01. Conversely, we also calculated the partial correlation between self-stereotyping and social identification controlling for self-anchoring, but this correlation was no longer significant, r (197) =.10, p = .17.

In order to get more detailed insight in the relationship between self-anchoring, self-stereotyping and social identification, we also calculated partial correlations for both affective and cognitive components of identification separately. Interestingly, we found that controlling for self-stereotyping, self-anchoring was significantly correlated with the affective component of social identification (r (197) = .21 p <.01) but not with the cognitive (r (197) =.09, p = .22). In contrast, when we controlled for self-anchoring, self-stereotyping is significantly correlated with the cognitive component of social identification (r (197) = .15, p <.05) but clearly not with the affective component (r (197) = .04, p = .55). In sum, we found that both self-anchoring and self-stereotyping can simultaneously account for the level of social identification. However, the results from the partial correlations suggest that self-anchoring has more predictive power on affective components of social identification, while self-stereotyping has more predictive power for the cognitive components. Finally, as expected we found a positive correlation between self-concept stability and self-anchoring, but not between self-concept stability and self-stereotyping (see Table 2.2).

Table 2.2
Summary of correlations, means, and standard deviations for all variables in Study 2.2 (N=202).

	M	*SD*	1.	2.	3.	4.	4.1	4.2
1. Self-anchoring	.24	.32	1	.52***	.17*	.29***	.27***	.19**
2. Self-stereotyping	.27	.31		1	.06	.24***	.18*	.22**
3. Self-concept Stability	4.24	1.10			1	.17*	.16*	.12
4. Social Identification	4.50	.80				1	.91***	.67***
4.1 affective component	5.01	.82					1	33***
4.2 cognitive component	3.25	1.25						1

***p < .001 **p < .01 *p <.05

Indirect effects. As in Study 2.1, we tested whether self-anchoring explained the relationship between self-concept stability and social identification, but now, we could statistically control for self-stereotyping. We again used the method by Preacher and Hayes (2004) to test the mediation model, but this time we inserted self-stereotyping as a covariate. First, we focused on the entire social identification scale (both affective and cognitive components). Bootstrapping (5000 samples) revealed that the overall model was significant explaining 11 % of variance, R^2 = .11, F (3, 196) = 8.36, p <.001. Self-concept stability was positively related to self-anchoring, b = .04, t (197) = 2.22, p <.05 and self-anchoring was strongly positively related to social identification, b = .53, t (197) = 2.63, p<.01. Different from Study 2.1, the direct effect of self-concept stability on social identification was also significant this time, b = .11, t (197) = .2.40, p <.05. Most importantly, we replicated the predicted indirect path via self-anchoring, while this time controlling for self-stereotyping; with a 95 % bias corrected and accelerated confidence interval from .004 to .053[6] the indirect effect was significant, indicating that higher self-concept stability leads to more self-anchoring, which in turn increases the level of social identification.

Secondly, we tested the same model, separately for the affective and cognitive component of social identification. The affective component of identification yielded the same pattern of results as the previous analysis: the overall model was significant explaining 9 % of variance, R^2 = .09, F (3, 196) = 6.46, p <.001 and the predicted indirect path via self-anchoring, while controlling for self-stereotyping, was significant; with a 95 % bias corrected and accelerated confidence interval from .003 to .052. For the cognitive component of identification however, the indirect effect was not significant (confidence interval: LB = -.01; UB = .05).

In sum, results of Study 2.2 replicate and complement the findings of Study 2.1, pointing out the unique role of self-anchoring on social identification, above and beyond self-stereotyping. In addition, we found evidence that self-anchoring is the cognitive route most predictive for affective components of identification, while self-stereotyping is the cognitive route most predictive for cognitive components. Moreover, in line with our expectations, the results show that individuals with a stable sense of self identify with their ingroup to the extent that their level of self-anchoring increases. This finding specifically holds for affective components of identification.

General Discussion

In line with our expectations, in we found that self-anchoring is uniquely and distinctively positively related to social identification, after taking self-stereotyping into account. Thus, not only top-down (i.e., self-stereotyping) but also bottom-up (i.e., self-anchoring) projection processes are positively related to social identification. Hence, other than assumed in SIT (Tajfel & Turner, 1979) and SCT (Turner et al., 1987) both the personal self and the social self seem to act as a source of information to create mental overlap between self and group. Furthermore, we found first evidence that self-anchoring and self-stereotyping might account for different components of social identification, such that self-anchoring is mainly related to affective, while self-stereotyping to cognitive components. Finally, we showed that individuals with high self-concept stability self-anchor more and that this significantly predicts their degree of identification, even after controlling for self-stereotyping.

Self-anchoring or self-stereotyping?

Recently, Didonato and collaborators (2010) suggested that self-anchoring (or induction) is most dominant in the creation of mental overlap between self and group, compared to self-stereotyping processes. On the other hand, there is also evidence indicating the reverse, namely that self-stereotyping is the dominant process behind self-ingroup overlap (Guimond, et al., 2006; Latrofa, et al., 2010). The results of our studies complement this debate from both a methodological as well as a theoretical perspective. In our studies we find comparable levels of self-anchoring and self-stereotyping, suggesting that, in contrast to both viewpoints, the strength of both projection processes may be equally high. Therefore, we propose an integrated perspective, such that both processes can contribute to self-ingroup overlap simultaneously. However, why then, is there such strong evidence for the dominance of one process over the other in previous literature? We suggest that his might be due to methodological aspects in the respective research.

On the one hand, support for the dominance of self-anchoring is typically based on the observation that response-times for self-anchoring are faster compared to self-stereotyping (Didonato et al., 2010, Otten & Epstude, 2006). However, the fact that the self is more accessible and conceptually richer compared to group-

representations and, therefore, facilitates response times more strongly, does not imply that self-stereotyping does not occur, but merely that it is not as readily accessible. In support for this, we find that levels of self-anchoring and self-stereotyping based on profile correlations are equally high, when both concepts are measured on a more explicit level and without time constrains.

On the other hand, a dominance of self-stereotyping over self-anchoring in previous studies (e.g. Guimond et al., 2006) could be driven by the fact that self-ingroup overlap was exclusively measured with traits stereotypical for the group. This argument does not apply to the research on self-stereotyping by Latrofa et al. (2010), who did in fact differentiate between stereotypical and ambiguous traits. But they did so in a single order design (self-group, Study 2.2). Therefore, since the group category was already made salient at the start of the study, self-ratings could already have been contaminated by group stereotypes, which could explain the dominance of self-stereotyping over self-anchoring.

We believe that our approach of measuring self-anchoring and self-stereotyping based on explicit trait ratings, with both ambiguous and stereotypical traits, and taking into account the order of ratings, is an elegant and methodologically sound way of measuring both concepts simultaneously. Consequently, based on our findings we suggest that maybe the question is not so much "Self-anchoring or self-stereotyping?", but rather "When self-anchoring and when self-stereotyping?"

Individual differences in self-anchoring

Our finding that people with high self-concept stability project their personal self more strongly on their ingroup is a first step in trying to answer the question "When do people self-anchor?" Our results underline the importance of investigating the impact of individual differences on self-anchoring processes and add to the relatively little research that has addressed this topic so far (Amit et al., 2010; Otten & Bar-Tal, 2002). Furthermore, based on the work by cross-cultural researchers such as English and Chen (1993) and Markus and Kitayama (1991), it would be interesting to apply the present findings on individual differences in the cognitive processes underlying social identification to an intercultural setting. Since the personal self is especially emphasized in Western cultures, one might hypothesize that self-anchoring should be more prevalent in individualistic cultures, while self-stereotyping should be the dominant process in collectivistic cultures.

Cognitive routes to identification

In recent years the role of the personal self has received increasing attention in social identification research (e.g., Otten, 2002; Postmes, Spears, Lee, & Novak, 2005; Sedikides & Brewer, 2001; Spears, 2001). In line with these developments, we found that the projection of the personal self onto the group bolsters social identification, distinctively from self-stereotyping processes. At first glance, self-anchoring even seemed more strongly related to social identification than self-stereotyping. However, a closer look at the different aspects of identification showed us that self-anchoring is more strongly related to affective aspects, while self-stereotyping especially relates to cognitive aspects of identification. Again, this underlines that self-anchoring and self-stereotyping do not need to compete with each other in their prevalence of and importance for social identification; rather, our results suggest that they are responsible for different aspects of social identification.

These findings open up new venues for research on how different cognitive routes to mental overlap, fulfill different social identification needs. Specifically, when linking our results to Optimal Distinctiveness Theory (Brewer, 1991), one could argue that self-anchoring taps mainly in the need to belong (based on positive feelings of group members towards their group on intragroup level), while self-stereotyping mainly taps into the need to be different (based self-definition in terms of group prototypes to create intergroup differentiation).

Limitations and implications

One important limitation of our studies is that they are correlational. Even though previous research suggests that mental overlap between self and group is a precondition for social identification (e.g., Tropp & Wright, 2001), the design of our studies does not allow us to straightforwardly show this causality. Therefore, future research should either adopt a longitudinal design or provide a manipulation of both types of projection processes to empirically investigate their causal impact on social identification.

Furthermore, it should be noted that – with the exception of our pilot study on the self-concept stability scale, in which we referred to the category of Dutch citizens – we tested our predictions in only one social context, namely among psychology students. Possibly, group context itself determines whether self-anchoring

or self-stereotyping is most strongly related to identification. For example, one could argue that a broad social category such as psychology students shares many features of minimal groups, like a diffused image of group characteristics and arbitrariness of boundaries (Rothbart, 1993). This might explain why in our study, self-anchoring is slightly more diagnostic for the level of identification than self-stereotyping. Moreover, it is easy to conceive that for other types of groups, which have a much more sharply defined set of group norms than the group of psychology students (e.g., religious movements like the Scientology church), self-stereotyping might be more prevalent (Hogg, 2004). Thus, the extent to which self-anchoring or self-stereotyping is indicative for identification, might depend on the prescriptiveness of group norms.

Finally, our research might have implications for social identification in diverse groups. One could argue that self-anchoring might facilitate identification in heterogeneous groups, because it offers the opportunity to acknowledge individual differences between group members. In contrast, self-stereotyping is largely based on similarity between group members, stemming from the assimilation to group prototypes, and might therefore be more applicable in homogeneous groups. By encouraging bottom-up identity formation (i.e., self-anchoring) we might foster a sense of belongingness among group members of different (cultural) backgrounds.

Conclusion

Our research provides first evidence that self-anchoring can facilitate social identification, above and beyond self-stereotyping. In addition, self-anchoring and self-stereotyping seem to affect different aspects of social identification. Therefore, both the social and the personal self provide an answer to our question 'How do people identify with groups?', as they both function as distinct sources supporting group identification.

Notes

[1.] The terms self-anchoring and social projection are often used interchangeably in the literature, thereby referring to the process of using the self as a heuristic to make group judgments (e.g. Krueger, 1998). For ease of readability we only use the term self-anchoring in the present paper; moreover, in the literature self-anchoring has more often been related to group processes such as ingroup favoritism and intergroup differentiation. Yet, conceptually we consider the two terms as equivalents.

[2.] Our pilot study (N = 144) confirmed a well interpretable three factor solution of the independence scale (Singelis, 1994) with Eigenvalues over 1, explaining 71% of the variance). One factor consisted of three items focusing on the uniqueness component (e.g. 'I enjoy being unique and different from others in many respects'; factor loadings >.50). Secondly, one factor comprised of two items focusing on stability of self in different contexts, ('I am the same person at home that I am at school' and 'I act the same way no matter who I am with'; factor loadings >.80). The third factor consisted of two items focused on realizing internal attributes and promoting one's own goals ('I prefer to be direct and forthright when dealing with people I've just met' and 'I feel comfortable using someone's first name soon after I meet them, even when they are much older than I am'; factor loadings > .70). Based on these findings, we constructed a self-concept stability scale with the last two factors, consisting of the four items (α = .63), grasping both the cognitive and the motivational part of self-concept stability. Moreover, exploratory analysis based on the pilot study confirmed that there was a significant positive correlation between the last two components of the independence scale (i.e. stability in different social situations, and promoting one's own goals) and self-anchoring (r =.21, p =.01) but not between the uniqueness component and self-anchoring (r =.10, p =.22).

[3.] We also tested alternative model with social identification as mediator and self-anchoring as dependent variable to rule out any reversed order models. However, bootstrapping results showed that this model was not significant (LB: -.013; UB: .040).

[4.] The trait 'mathematical' was deleted because this item was counter stereotypical for psychology students and therefore not applicable for the self-anchoring measure.

5. The trait 'extravert' was deleted because participants indicated that it was not stereotypical for psychology students.

6. We also tested alternative model with self-stereotyping as mediator and self-anchoring as covariate variable to rule out any reversed order models. However, bootstrap results showed that this model was not significant (LB: -.0195; UB: .0060).

Appendix

Trait list of non-stereotypical and stereotypical traits for psychology students.

Non-stereotypical traits Study 1 and 2[b]	*Stereotypical traits Study 2*[a]
Impulsive	Calm
Fashionable	Sensitive
Sweet tooth	Reader
Thrifty	Curious
Handy	Thoughtful
Environmentally conscious	Analytic (counter)
Mysterious	Athletic (counter)
Diplomatic	Social
Insecure	Technical (counter)
Extravagant	Emotionally intelligent
Religious	Concern for others
Vain	Interested in others
Musical	Pragmatic (counter)
Nature lover	Self-critical
Introvert	Observant
In itself	Openminded
Artistic	Emotional
Tidy	Good listener
Edgy	Self-conscious
Sportily	Profound
Animal lover	Austere (counter)
Theatrical	Thinker
Fond of traveling	Talker
Politically involved	Sympathetic
Arithmetic	

[a] To ensure an equal amount of variance on both the non-stereotypical and the stereotypical traits, we also included counter-stereotypical traits for psychology students (i.e. traits that are typically not applicable to psychology students. Those are referred to as 'counter' in the second column.

[b] In Study 2 participants indicated that the trait 'arithmetic' (first column) was counter-stereotypical with respect to psychology students. Therefore we did not use this trait to measure self-anchoring and excluded it from the trait list in Study 2.

Chapter 3

Social identification when an ingroup identity is unclear: The role of self-anchoring and self-stereotyping[2]

Abstract

The present paper investigates how people identify with groups depending on the clarity of a group's identity content. According to self-categorization theory, self-stereotyping (i.e., projection of group prototypes onto self) should be the cognitive process underlying social identification. We argue, however, that this is only plausible in clearly defined groups. If a group is unclear in terms of its identity content, we argue that self-anchoring (i.e., projection of personal self onto group) accounts for social identification. In line with these hypotheses, two studies (with minimal and real groups) reveal that self-anchoring positively predicts the level of social identification and entitativity in unclearly, but not clearly defined groups. Conversely, self-stereotyping positively predicts the level of social identification in clearly, but not unclearly defined groups. Together, these findings are the first to demonstrate the differential impact of cognitive projection processes on social identification depending on group clarity.

[2] This chapter is based on: Van Veelen, R., Otten, S., & Hansen (2012a). Social identification when an ingroup identity is unclear: The role of self-anchoring and self-stereotyping. *British Journal of Social Psychology* (pagination not specified). doi:10.1111/j.2044-8309.2012.02110.x

In 2007, Princess Maxima from the Netherlands made the controversial statement that "The Dutch identity does not exist" (WWR, 2007). This statement elicited much debate in the Netherlands about what it means to be Dutch. Nonetheless, many Dutch people identify strongly with their nationality (Dotinga & van der Zee, 2010). In fact, considering her involvement in public life in the Netherlands, Princess Maxima may be a high-identifier herself. The debate illustrates that even a well-established group identity such as a nationality can, at certain times and for certain people lack clarity regarding its identity content, and that it may be possible for people to identify with unclearly defined groups.

The Dutch identity is just one example of how a group may be unclearly defined. There are, in fact, many examples of groups lacking clarity, such as newly formed work teams, or complex social categories such as European. Yet, considerably little is known about *how* people identify with unclearly defined groups. This is unfortunate, as we assume that how people identify with groups will depend on the *clarity* of the group's identity content. Therefore, in the present paper we focus on the differential impact of cognitive routes leading to social identification as a function of group clarity.

Cognitive routes to social identification

In order for people to identify with a group, a certain degree of perceived mental overlap between the self and the group concept must be present (Smith & Henry, 1996). More mental overlap between self and group indicates higher social identification (Coats, Smith, Claypool, & Banner, 2000; Tropp & Wright, 2001, 2003).

According to self-categorization theory (SCT; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) the general cognitive strategy to create mental overlap is *self-stereotyping*, or the assimilation of the self to group prototypes (e.g., Lorenzi-Cioldi, 1991; Simon & Hamilton, 1994). SCT posits that each individual has a social self and a personal self, existing at opposing ends of the same continuum. With self-stereotyping, the social self becomes salient and the personal self shifts to the background, or depersonalizes; people come to describe themselves in terms of prototypical group characteristics. Thus, self-stereotyping implies self-group overlap based on conformity to socially shared, prototypical group norms.

In line with SCT, we agree that self-stereotyping may indeed be a cognitive process accounting for social identification. Yet if self-stereotyping were the *only*

cognitive route towards identification, this would imply that people solely identify with clearly defined groups. Only in these groups well-defined group prototypes can quite easily be projected onto the self. Nevertheless, prior research has shown that people also identify with groups lacking clarity in their identity content (see Lickel, Hamilton, Wieczorkowska, Lewis, Sherman, & Uhles, 2000; Jetten, Hogg, & Mullin, 2000, Study 2; Peker, Crisp, & Hogg, 2010). In these groups, self-stereotyping cannot convincingly account for social identification; there is no group information readily available to assimilate the self to. Therefore, the question is *how* do people identify with groups lacking clarity regarding their identity content? We propose that *self-anchoring* may be the cognitive route to social identification in these groups.

Research has shown that mental overlap between self and group not only emerges top-down, via self-stereotyping, but also bottom-up, via *self-anchoring*[1] (Cadinu & Rothbart, 1996). Self-anchoring implies the projection of personal self-attributes onto a group. Self-anchoring was first demonstrated in minimal groups to explain why people display ingroup favoritism even towards such arbitrary groups (Cadinu & Rothbart, 1996; Clement & Krueger, 2002; Gramzow, Gaertner, & Sedikides, 2001; Otten & Wentura, 2001). The findings revealed that the projection of positive self-perceptions onto the ingroup can account for the preference of the ingroup over outgroups in minimal group paradigms (MGP). Additional evidence shows that self-anchoring is not only relevant in minimal, but also in real groups (Otten, 2004; Otten & Epstude, 2006; van Veelen, Otten, & Hansen, 2011).

Self-anchoring does not depend on the availability of group knowledge (as self-stereotyping does), but on the use of the *personal self*. It enables individuals to fill in cognitive gaps in a group's representation based on self-knowledge, thereby allowing the construction of a meaningful group identity. Following from this, we expect that in unclearly defined groups, self-anchoring – and not self-stereotyping – accounts for the level of social identification. To our knowledge, this idea has not yet been tested empirically. Moreover, there is no research providing a comparison between self-anchoring and self-stereotyping as predictors of social identification depending on group clarity.

Thus far, both self-stereotyping and self-anchoring have mainly been investigated in separate lines of research, specifically for their impact on *intergroup level* processes such as intergroup bias and ingroup favoritism (self-stereotyping: e.g., Hogg & Turner, 1987; Latrofa, Vaes, Pastore, & Cadinu, 2009; self-anchoring: e.g., Clement & Krueger, 2002; Gramzow et al., 2001; Otten & Wentura, 2001; Krueger, 2007). Only recently, researchers have begun to investigate the *interplay* between self-

anchoring and self-stereotyping, and their unique predictive value for social identification. This research has shown that both self-anchoring and self-stereotyping can occur *simultaneously* within an individual, and that both predict a unique proportion of variance in social identification (Van Veelen et al., 2011). We aim to further extend these findings and provide evidence that the predictive value of self-anchoring and self-stereotyping for *social identification* is moderated by the clarity of a group's identity content. In addition, we investigate whether self-anchoring can enhance a group's perceived unity, in the sense that it is associated with "groupiness" or *entitativity* (Campbell, 1958), even if group clarity is low.

Group clarity and social identification

So far, group clarity has mainly been investigated in for its impact on cognitive process pertaining to the *intergroup* context, such as ingroup projection, intergroup differentiation, and outgroup attitudes (e.g., Waldzus, Mummendey, Wenzel, & Weber, 2003; Machunsky, Meiser, & Mummendey, 2009). We adopt a definition of group clarity based on this work. We define a group identity as unclear if there is no clear-cut knowledge available about the meaning of its identity content. In contrast, we define a clear group identity as a group having unequivocal available knowledge about its content.

Intragroup research on group clarity and cognitive projection processes is relatively scarce. Within the self-anchoring domain Robbins and Krueger (2005), who compared minimal with real groups in a meta-analysis, suggested that *ill-defined* group representations may foster a focus on the self as a source of projection. Conversely, within the self-stereotyping domain it is argued that a social category should be meaningful in order for people to attain a depersonalized self-perception (e.g., Simon, Hastedt, & Aufderheide, 1997). Thus, in both research domains there is indirect support for the notion that self-anchoring may have a more important role in unclear groups, while self-stereotyping is more relevant in clear groups. Yet a direct comparison of self-anchoring and self-stereotyping in both types of groups to investigate their differential impact on social identification has, to our knowledge, not been done before.

According to the social judgeability approach (Yzerbyt, Schradon, Leyens, & Rocher, 1994), people need to believe that they have diagnostic information before they feel entitled to make social judgments. Therefore, when a group is unclearly

defined, we argue that self-knowledge should be far more reliable and readily available compared to group knowledge (see also Machunsky et al., 2009; Otten, 2002). In unclear groups, the self should serve as an anchor to create a mental bond with the group. Therefore, we hypothesize that self-anchoring most strongly predicts social identification in unclear rather than clear groups (*Hypothesis 1a*). In contrast, in a clearly defined group, knowledge about the group is clear, informative, and readily available (e.g., Dijksterhuis & van Knippenberg, 1999). As such, the group provides diagnostic information, which is needed to assimilate the self to. Therefore, we hypothesize that self-stereotyping is a stronger predictor of social identification in clear compared to unclear groups (*Hypothesis 1b).*

Group clarity and entitativity

When thinking about unclear groups the question arises: To what extent can a group identity that lacks a clear picture on its content still be called a group? Especially if we assume that in unclear groups self-anchoring is the process accounting for social identification, isn't the group merely a loose bundle of separate individuals identifying via a mental projection of themselves, without any sense of "groupiness"? In order to gain more insight, not only in how people *identify with* unclear groups, but also in how people *perceive* these groups, we are also interested in *entitativity*, or the perceived unity of a group (Campbell, 1958). In this respect, our question is: Can self-anchoring account for the level of perceived entitativity in an unclear group, just as it is assumed to account for social identification?

In early research, entitativity was mainly described as the similarity between group members (Campbell, 1958; Brewer & Harasty, 1996). More specifically, entitativity was seen as the extent to which a group is organized (Hamilton, Sherman, & Lickel, 1998) has a clear cognitive representation (Brewer & Harasty, 1996) or has common goals or features (Yzerbyt, Rocher, & Schadron, 1997). Thus, highly entitative groups were seen as groups represented in terms of a clear group-member prototype, and therefore associated with clarity about a group's identity.

More recent research however, suggests that perceived entitativity may not merely be based on the properties of the group itself, but also on the relationship between the self and the group: the subjective relevance of a group to the individual self is also a strong predictor of perceived entitativity (Lickel et al., 2000; Rutchick, Hamilton, & Sack, 2008). Moreover, Krueger, Acevedo, and Robbins (2006) suggest that self-anchoring may facilitate entitativity in absence of group stereotypes, based on

empirical evidence showing that self-anchoring increases consensus estimates. Hence, these findings suggest that different groups may attain their entitativity in different ways. On the one hand perceived entitativity can be based on the assimilation to clearly defined group prototypes. On the other hand, in absence of such group clarity, entitativity can also stem from other sources, namely the projection of personal attributes onto the ingroup. In this latter case, we may assume that a stronger projection of the personal self onto the group (i.e., self-anchoring) can account for perceived entitativity in unclearly defined groups.

Thus, we expect that entitativity will be higher in clear compared to unclear groups. However, we assume that perceived entitativity can also be obtained in unclear groups, namely via self-anchoring. We hypothesize that individuals who strongly self-anchor in unclear groups, will perceive their group as more entitative compared to those who do not or only weakly self-anchor *(Hypothesis 2a)*. For self-stereotyping we expect the reverse pattern; self-stereotyping should have no or only a weak impact on entitativity in unclear groups, considering there are no well-defined group characteristics accessible. However, in clear groups we do expect self-stereotyping to positively impact on entitativity (*Hypothesis 2b*).

The present research

People identify with groups, irrespective of the clarity of their identity content. Yet, *how* people identify with both groups in terms of the cognitive process is still unknown. We aim to shed more light on this matter by demonstrating that self-anchoring accounts for social identification in unclear groups (Study 3.1 and 3.2), while self-stereotyping does so in clear groups (Study 3.2). Moreover, we test the hypothesis that in an unclear group, self-anchoring may substantially raise perceptions of entitativity (Study 3.1 and 3.2). In Study 1, we relied on a minimal group setting and focused exclusively on the predictive value of self-anchoring on identification and entitativity depending on group clarity. In Study 3.2, we employed a realistic group context and measured both self-anchoring and self-stereotyping, thereby allowing the investigation of the interplay and relative impact of both processes as a function of group clarity.

Study 3.1

Method

We manipulated clarity of group identity by taking advantage of the MGP. Normally, a minimal group setting is used to strip off all information available about the content of a group's identity. However, research has shown that in some cases, already subtle information given about the group, for example based on group labels, is used by participants to give meaning to the group (Spears, 2002). In that respect, minimal groups can be either clear or unclear depending on the associative content of group labels. If associative meaning is present, people may form consistent group stereotypes, merely based on the category labels provided to them. If this is not present, it remains completely unclear what a group identity comprises. Based on this reasoning, we manipulated group clarity by differentiating between group labels *with* and *without* associative meaning.

Participants and design. One hundred-and-two university students participated in the study. Eight participants were excluded from the analysis because they failed to fill out all the questions to construct a self-anchoring score or because they indicated being suspicious about the manipulation. The remaining 94 participants (72 female; M_{age} = 20.10, SD = 1.87) were randomly assigned to a two-factor design with group clarity (manipulated: clear / unclear) and self-anchoring (measured) as predictor variables and identification and entitativity as dependent variables.

Procedure and materials. Participants were told that they would participate in a study on personality and perception style. They were seated in separate cubicles and filled out questionnaires on a computer. They received study credits in return

Self-ratings. After the general introduction, all participants first rated 16 traits, ambiguously defined for the group (see construction self-anchoring score) on their applicability to the *self* on a 9-point Likert scale (1 = not at all applicable; 9 = completely applicable). The traits were selected from a pilot study in order to measure self-anchoring within the manipulated group context.

Group clarity manipulation. Next, participants were randomly assigned to a clear or unclear group condition. All participants read that in general, there are two perception styles. In the *clear* group condition we stated that these were 'detailists' and

'globalists' while in the *unclear* group condition we stated that these were 'Type A'- and 'Type B'- perceivers. Based on pilot testing we know that the labels 'detailist' and 'globalist' carry meaning and therefore activate certain stereotypes. For example, detailists are associated with the characteristics 'perfectionist' and 'punctual', while globalists are associated with 'being flexible' and 'generalizing' (see also Spears, 2002). In contrast, the labels Type A and Type B perception style carry no meaning, thereby leaving it completely unclear what the content of the group is.

We further strengthened our manipulation by stating in the *clear* group that research has already provided us with a clear and reliable picture of who detailists and globalists are. In contrast, in the *unclear* group we stated that previous research has provided us with a very vague picture of what it means to have a Type A or B perception style.

Participants in the clear group were all categorized as detaillists based on a dot estimation task. In the unclear group participants were all categorized as Type A based on their choices from a series of pairs of paintings (Kandinsky or Klee)[2].

Group ratings. After the group manipulation, participants again rated the 16 ambiguously defined traits, on a 9-point Likert scale (1 = not at all applicable; 9 = completely applicable), but this time on the applicability to their group.

Entitativity. After the group ratings**,** perceived entitativity was assessed with two items adopted from Brooke, Postmes, Jetten, and Dyson (2009). The items were 'There is great togetherness among detailists / Type A – perceivers' and 'Detailists/Type A-perceivers are a unit', r (94) =.76, p <.001), rated on a Likert scale ranging from 1 (not at all) to 7 (very much).

Social identification. Subsequently, social identification was assessed with nine items [e.g., 'I feel connected to the people with my perception style', α =.82; items were adapted from the multi-component identification scale by Leach et al., (2008). We incorporated one or two items from each subscale, to have a broad and inclusive measure of identification with high internal consistency]. All items were again rated on a 7-point Likert scale.

Manipulation check. Finally, participants completed 3 items (adopted from Waldzus et al., 2003) measuring how clear or unclear participants perceived their group identity to be (e.g. 'It is possible to say with certainty what the characteristics of detailists/Type A are'; α =.62) on a Likert scale ranging from 1 (not at all) to 7 completely).

Construction of self-anchoring score. We calculated a self-anchoring score based on the overlap between self and group on the 16 trait ratings (van Veelen et al., 2011). In minimal groups, it is generally assumed that group identities cannot be derived from pre-existing knowledge of the group (e.g., Gramzow et al., 2001). Based on this assumption, self-group overlap in a minimal group should automatically be interpreted as self-anchoring. However, as stated before, some group labels used in MGP's, such as 'detailist' and 'globalist; already contain group stereotypical information. Therefore, we must consider that specifically in the clear group condition, overlap between self and group can not only be inferred from knowledge of the self (i.e., self-anchoring) but also from the group (i.e., self-stereotyping). This latter knowledge might interfere with the diagnostic value of the self.

Therefore, to measure self-anchoring (and not self-stereotyping), we included traits which were − according to a pilot study − non-stereotypical for detailists and globalists, and relatively neutral in valence (around the midpoint of a 7-point scale; 1 = very negative; 7 = very positive). By focusing on traits clearly defined for the self but ambiguous with respect to their applicability to the group, self-anchoring can be measured most accurately. Also, self-ratings were measured *prior* to making the minimal group category salient, to avoid any influence of the group label on self-ratings (Otten & Epstude, 2006; Van Veelen et al., 2011; see Appendix for trait list).

We calculated a self-anchoring score using intra-individual profile correlations (e.g., Otten & Wentura, 2001; Van Veelen et al., 2011). For each participant we calculated the correlation between self and group ratings, while controlling for popularity of each trait. Item popularity is the general tendency to endorse an item, for example due to social desirability or valence effects. It is important to control for item popularity when calculating the strength of association between self and group ratings, because without it a self-group correlation might not only stem from self-group projection, but also from the general popularity of the item. Hence, to rule out the variation explained by item popularity, and further control for slight variations in valence of the traits, we calculated a partial correlation controlling for popularity. For each trait popularity was calculated as the proportion of participants positively endorsing a trait (i.e., 6-9 on the Likert scale; De la Haye, 2000; Krueger & Clement, 1994). Higher scores indicated higher self-anchoring[3].

Results

Manipulation check. An analysis of variance (ANOVA) with group clarity (clear / unclear) as the independent variable and the manipulation check as dependent variable showed more perceived clarity about the group's identity in the clear (M = 3.55, SD =.89) compared to the unclear group (M = 3.07, SD = 1.12), $F(1, 92) = 5.54$, $p = .02$, $\eta^2 = .06$. Thus, we successfully manipulated the clarity of the group.

Descriptives. Self-anchoring scores were based on profile correlations, ranging from -1 to +1. The general level of self-anchoring was significantly above zero (M =.50, SD =.34), t (93) = 14.34, p <.001, indicating a positive association between the self and the group across conditions. Moreover, the level of self-anchoring was higher in the unclear (M =.67, SD =.21) compared to the clear (M =.34, SD =.35) group, F (1, 92) = 30.54, p <.001, η^2 = .25. We further inspected the correlations between both projection measures and the dependent variables for each group condition separately (see Table 3.1). As expected, self-anchoring was positively related to social identification and entitativity in the unclear, but not in the clear group condition.

Social identification. We conducted a regression analysis with group clarity (dummy-coded: 0 = clear; 1 = unclear), the Z-transformed self-anchoring score, and their interaction term as predictor variables, and social identification as dependent variable. Overall, 16% of the variance in *social identification* was explained, $F(3, 90) = 5.80$, p <.01. Group clarity significantly predicted social identification, such that it was higher in the clear compared to the unclear group, B = -.45, SE = .10, t = -3.82, p <.001. Secondly, self-anchoring significantly and positively predicted social identification, B =.45, SE = .11, t = 3.49, p <.01. Importantly, the interaction term between self-anchoring and group clarity was also significant, B = .25, SE = .11, t = 2.22, p =.03 (Figure 3.1). Simple slope analysis revealed that in the clear group self-anchoring was not associated with social identification (p >.10). In the unclear group, however, social identification was significantly higher for those who did self-anchor (+ 1 SD), compared to those who did not (−1 SD), B = .73, SE = .20, t = 3.28, p <.01.

Entitativity. Regression analysis on entitativity revealed that overall, 8% of the variance was explained by group clarity, self-anchoring and their interaction, F (3, 90) = 2.54, p =.06. In line with our expectations, group clarity significantly predicted perceived entitativity, such that it was higher in the clear compared to the unclear

group, B = -.26, SE = .10, t = -3.82, p =.04. Secondly, self-anchoring significantly and positively predicted perceived entitativity, B = .30, SE = .18, t = 2.27, p =.03. Importantly, the interaction term between self-anchoring and group clarity was significant, B = .27, SE = .18, t = 2.25, p =.03 (Figure 3.1). Simple slope analysis revealed that in the clear group self-anchoring was not associated with entitativity (p >.10). In the unclear group however, perceived entitativity was higher for those that did self-anchor (+ 1 SD), compared to those who did not (−1 SD), B = .61, SE = .31, t = 2.58, p =.01.

Discussion

The results of Study 3.1 supported our predictions. First, self-anchoring significantly accounted for the level of social identification in the unclear group, while in the clear group no such effects occurred (*Hypothesis 1a*). Secondly, as expected the clear group was seen as more entitative compared to the unclear group. However, in the unclear group perceived entitativity was significantly enhanced as a function of self-anchoring (*Hypothesis 2a*).

Previous research revealing that self-stereotyping may account for identification (e.g., Hogg, Sherman, Dierselhuis, Maitner, & Moffit, 2007; Jetten et al., 2000) rests upon what we consider clearly defined groups. But how about the self-stereotyping-identification link in unclearly defined groups? In Study 3.1, we employed a minimal group setting that did not allow us to measure and compare self-stereotyping with self-anchoring across group conditions, due to the absence of group information, specifically in the unclear group condition. This is different when referring to a real group context. Here, despite the fact that there can be substantial lack of clarity about the group's identity content, to a certain extent, information about this identity is always available. As such, a replication of Study 3.1 in a real group context enables us to directly measure self-stereotyping and compare it to self-anchoring, as predictors of social identification across group conditions. Furthermore, such replication also provides more insight in whether people deal in a similar way with unclear group identities in both real and minimal groups.

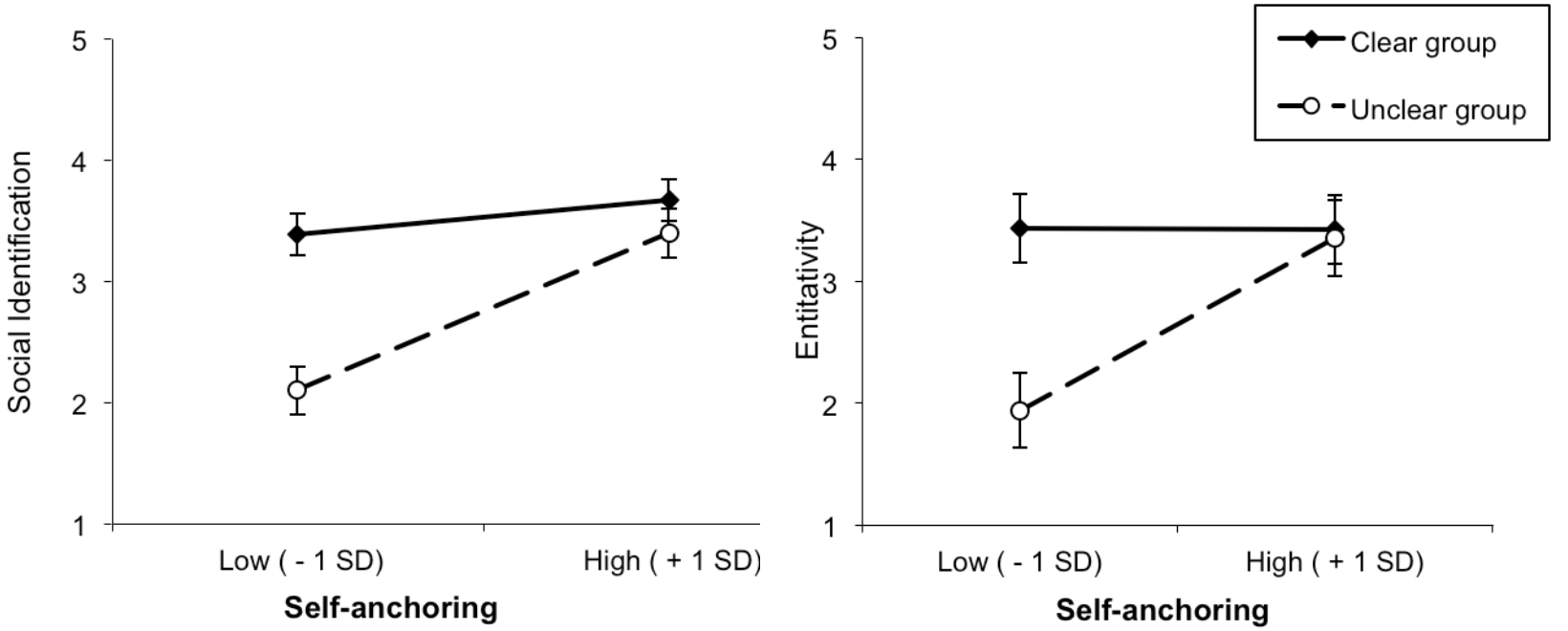


Figure 3.1
The positive effect of self-anchoring on social identification (left panel) and entitativity (right panel) as a function of group clarity (Study 3.1). Error bars represent standard errors.

Table 3.1

Descriptives, partial correlations, and zero-order correlations between self-anchoring, self-stereotyping and the dependent variables in Study 3.1 (N=94) and Study 3.2 (N=113).

			Study 3.1				**Study 3.2**			
			M	*SD*	Social identification	Entitativity	*M*	*SD*	Social identification	Entitativity
Self-anchoring	Clear	***pr***	**.34**	**.35**	**.18**	**-.004**	**.10**	**.43**	**-.18**	**-.05**
		r	.44	.34	.27	.061	.22	.39	-.04	.14
	Unclear	***pr***	**.67**	**.21**	**.44****	**.41****	**.20**	**.50**	**.37****	**.27***
		r	.71	.21	.42**	.29*	.22	.50	.32**	30**
	Total	***pr***	**.50**	**.34**	**.12**	**.06**	**.15**	**.47**	**.12**	**.07**
		r	.58	.30	.19	.08	.22	.44	.17	.21*
Self-stereotyping	Clear	***pr***	-	-	-	-	**.08**	**.40**	**.36****	**.32***
		r					.18	.38	.34**	.44**
	Unclear	***pr***	-	-	-	-	**.19**	**.45**	**.19**	.12
		r					.25	.42	.20	29*
	Total	***pr***	-	-	-	-	**.13**	**.42**	**.23***	**.15**
		r					.21	.40	.33**	.21*

Note.** $p < .01$ (2-tailed); * $p < .05$ (2-tailed)

Study 3.2

Method

As a real group context, we referred to the Dutch identity. As stated in the introduction, recently the Dutch identity has been heavily debated and characterized as unclear. While some still claim the relevance of national stereotypes like 'Dutch tolerance' and 'down-to-earth mentality', others are in search for the meaning of the Dutch identity. This ambiguity allowed us to manipulate group clarity in a real group.

Participants and design. Participants in the experiment were 125 students. Twelve participants were excluded from the analysis; seven did not have the Dutch nationality and five indicated being suspicious about the manipulation. The remaining 113 participants (90 female, M_{age}= 19.57, SD = 3.26) were included for analysis. The study had a mixed design with group clarity (manipulated; clear / unclear), self-anchoring and self-stereotyping (measured) as predictor variables, and social identification and entitativity as dependent variables.

Procedure and materials. We told participants that they would participate in a study about perceptions on societal issues. Participants were seated in separate cubicles and filled out questionnaires on a computer. They received study credits or 5 euro in return.

Self-ratings 1. As in Study 3.1, participants first rated 7 traits on their applicability to the self on a 9-point Likert scale (1 = not at al applicable; 9 = completely applicable). According to a pilot study, these traits were neither stereotypical nor counter-stereotypical for the Dutch identity, in order to guarantee self-ingroup overlap on these trait dimensions is based on self-anchoring, and not self-stereotyping.

Group clarity manipulation. Participants were then asked to read an article about a survey study on the Dutch identity, ostensibly published on a website from one of the largest research institutes in the Netherlands. They were randomly assigned to a clear or unclear group condition. In the *clear* group participants read that the survey study showed that the Dutch have a clear idea about the meaning of being Dutch and that they are very well able to name typically Dutch characteristics. In contrast, in the *unclear* group condition participants read that according to the survey

the Dutch have no clear idea about the meaning of being Dutch and that they are unable to name typically Dutch characteristics.

We pilot-tested this group clarity manipulation carefully to ensure its effectiveness, but also to ensure that the conditions would not differ in perceived group threat. In the pilot study, we measured group threat based on 13 items by Stephan and Stephan (1985; α =.83) and found no differences in perceived threat between the two conditions, F (1, 45) <.01.

Group ratings. After the group manipulation, participants rated the same 7 traits as initially rated for the self, but this time on their applicability to the group (the Dutch) on a 9-point Likert scale (1 = not at all applicable; 9 = completely applicable). In addition, participants also rated 7 traits which were − based on a pilot study − stereotypical or counter-stereotypical for the Dutch, and again the valence of traits relatively neutral (i.e., around the midpoint of the scale; 1 = very negative; 7 = very positive). Importantly, the average valence of the ambiguous traits to measure self-anchoring (M = 4.44; SD = .57) did not significantly differ from the average valence of the stereotypical traits to measure self-stereotyping (M = 4.69; SD =.40), F (1, 17) = 2.72; p >.10. The 14 traits were offered in random order (see Appendix).

Self-ratings 2. After the group ratings, participants filled out some filler questions and rated another 7 traits on their applicability to the self, again on a 9-point Likert scale. Importantly, this time the 7 *stereotypical* traits for the Dutch were rated (self-rating/time 2). Based on group and self-ratings (time 2) on stereotypical trait dimensions, we calculated self-stereotyping (see construction projection scores).

Entitativity. Subsequently**,** as in Study 3.1, perceived entitativity was assessed with two items adopted from Brooke et al. (2009) on a 7-point Likert scale, r (113) = .52, p <.001.

Social identification. Next, as in Study 3.1**,** national identification was based on 7 items adapted for the Dutch nationality from Leach et al. (2008; e.g., I feel connected with the Dutch, α = .88) rated on a 7-point Likert scale.

Manipulation checks. Finally, the manipulation check of our group clarity manipulation in the Dutch context was measured with one item ('The Netherlands has a clearly defined group identity'; Waldzus et al., 2003) on a Likert scale from 1 (I do not agree) to 7 (I completely agree).

To check whether participants read the manipulation thoroughly, we asked: 'What are the results of the survey study?' (1 = the Dutch identity does not exist; 7 = the Dutch identity clearly exists). Finally, to check whether the survey results in both conditions were perceived as equally realistic we asked 'Are the results of the survey

study in line with your expectations about the Dutch identity?' and 'According to you, were the results of the survey study realistic?' (1 = not at all; 7 = completely), r (113) = .69, p <.001.

Construction of projection scores. The procedure to construct a self-anchoring score was the same as in Study 3.1. For self-stereotyping we followed a similar procedure, only this time we used the 7 group ratings and self-ratings (time 2) on the traits *stereotypical* for the group. Self-ratings on stereotypical traits were deliberately measured *after* the group category was made salient, in order to make sure that the group was readily available as a heuristic to define the self (van Veelen et al., 2011). Again, we calculated profile correlations, controlling for item popularity. This procedure allowed us to measure the extent to which participants project stereotypical group characteristics on the self. For both self-anchoring and self-stereotyping, higher scores indicate higher levels of projection.

Results

Manipulation checks. An ANOVA on the item 'What were the results of the survey study?' showed that participants in the unclear group condition indicated that the Dutch identity does not exist (M = 1.80, SD =.85) while participants in the clear group condition indicated that the Dutch identity does exist (M = 6.28, SD =.79), F (1, 111) = 843.91, p <.001, η^2 = .88. Thus, the participants read and remembered the article properly.

Furthermore, the survey results were perceived as equally realistic in the clear and unclear condition, F (1,111) = .19, p =.67, η^2 = .002. Moreover, means in both group conditions were significantly above the midpoint of the scale on this measure (M = 4.93, SD = 1.37, t (112) = 7.92, p <.001, test value = 4); hence, both survey reports on the Dutch identity were perceived as highly and equally realistic.

Finally, as expected, perceived group clarity was higher in the clear group (M = 5.36, SD = 1.15) compared to the unclear group condition (M = 2.16, SD = 1.21), F (1,111) = 206.91, p <.001, η^2 =.65. In sum, we were able to show that our implementation of either a clear or unclear Dutch identity was successful and strongly affected perceived group clarity.

Descriptives. We investigated the level of self-anchoring and self-stereotyping within the Dutch context. Both the level of self-anchoring (M = .15, SD =.47), t (111) = 3.35, p <.01, and self-stereotyping (M = .13, SD =.43), t (111) = 3.23, p <.01, were significantly above zero, indicating that the association between the self and the group was generally positive.

Next, we inspected correlations between projection measures and the dependent variables separately for each group condition (see Table 3.1). In line with Study 3.1, self-anchoring was significantly positively correlated with social identification in the unclear, but not in the clear group. Conversely, self-stereotyping was significantly positively correlated with social identification in the clear, but not in the unclear group. Again, we found that self-anchoring was significantly positively correlated with entitativity in the unclear, but not in the clear group, while the opposite pattern applied to self-stereotyping.

Social identification. We conducted a regression analysis with group clarity (dummy-coded: 0 = clear; 1 = unclear), the Z-transformed self-anchoring and self-stereotyping scores and all possible interaction terms as predictors, to investigate the effect on social identification. Overall, 23% of the variance in social identification was explained by the model, F (7, 103) = 4.26, p <.001. Self-stereotyping significantly and positively predicted social identification, B = .25, SE = .09, t = 2.75, p <.01. No main effects were found for self-anchoring or group clarity. However, the interaction term between self-anchoring and group condition was significant, B = .26, SE = .09, t = 2.96 p <.01 and the three-way interaction term was marginally significant, B = -.17, SE =.08, -1.87, p =.06. We broke this three-way interaction down by looking at the effect of self-anchoring and self-stereotyping and their interaction on identification, separately for both group conditions.

In the *clear group* condition, 18% of the variance in social identification was explained, F (1, 53) = 3.98, p =.01. We found that only self-stereotyping significantly and positively predicted the level of identification, B = .40, SE = .11, t = 3.13, p <.01. No effects were found for self-anchoring (p >.10), nor for its interaction with self-stereotyping (p >.10). Thus, as expected, in a clearly defined group, self-stereotyping is positively associated with social identification, but self-anchoring is not.

For the *unclear group* condition, we found the opposite pattern. In total, 20% of the variance in social identification was explained by the model, F (3, 50) = 4.18, p =.01. This time, only self-anchoring significantly and positively predicted the level of identification, B = .36, SE = .14, t = 2.81, p <.01. No effects were found for self-

stereotyping (p > .10), nor for its interaction with self-anchoring (p >.10). Again, in line with our hypothesis, in an unclearly defined group self-anchoring is positively associated with identification, but self-stereotyping is not (Figure 3.2).

Entitativity. Overall, 24% of the variance in entitativity was explained by the model, F (7,103) = 4.68, p <.001. Self-stereotyping significantly and positively predicted perceived entitativity; B = .18, SE = .09, t = 2.00, p =.05. As expected, group clarity also significantly predicted perceived entitativity, such that it was higher in the clear group compared the unclear group, B = 0.38, SE = .89, t = - 4.37, p <.001. Moreover, a marginal two-way interaction of self-anchoring and group clarity emerged, B = .16, SE = .09, t = .86, p =.07. The three-way interaction of self-anchoring, self-stereotyping and group clarity was not significant (p >.10), indicating no differential effect of self-stereotyping on entitativity depending on group clarity.

We further investigated the simple slopes of the two-way interaction between group clarity and self-anchoring, to test whether the same pattern between self-anchoring, clarity of group identity, and entitativity would emerge as in Study 3.1. The results confirmed that in the clear group, self-anchoring was unrelated to perceived entitativity (p > .10). In the unclear group however, perceived entitativity was higher for those who did self-anchor (+ 1 SD), compared to those who did not (−1 SD), B = .25, SE = .13, t = 2.01, p =.05 (Figure 3.3). This again supports our hypothesis that in unclearly defined groups, substantial perceptions of entitativity can be obtained via self-anchoring.

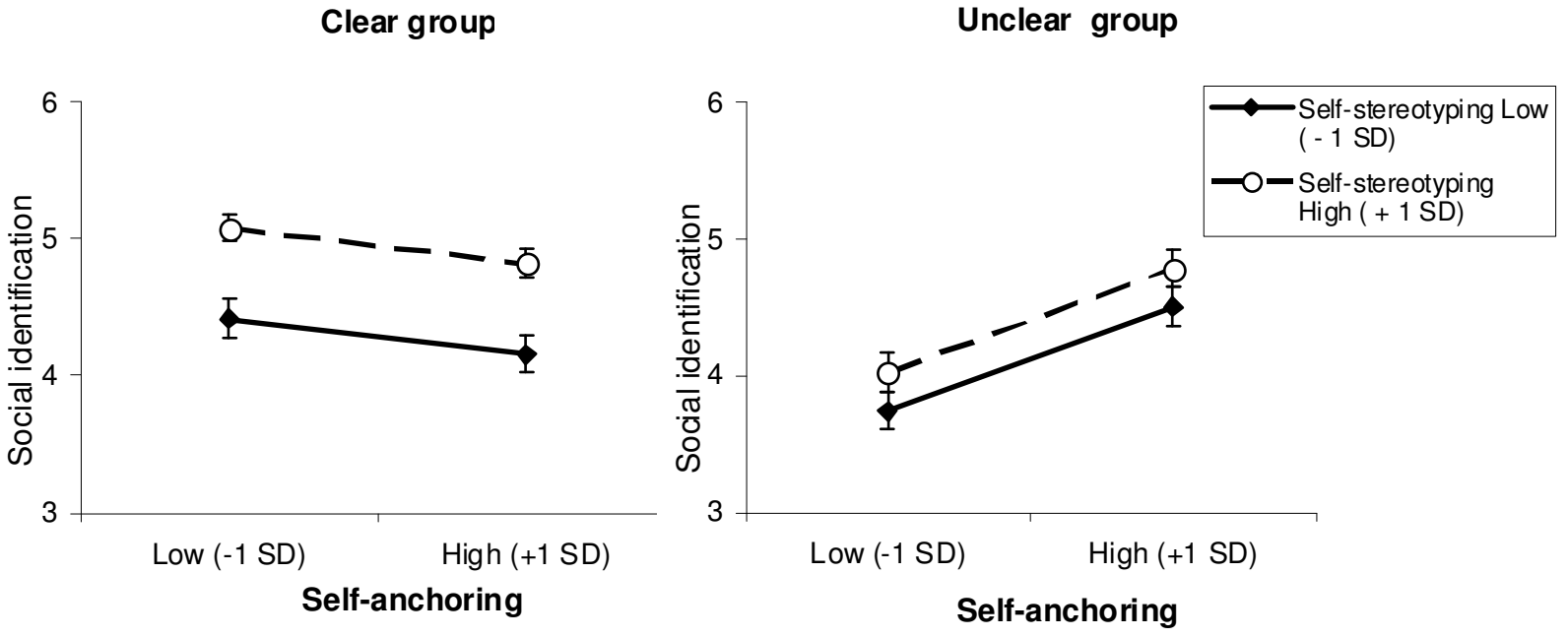


Figure 3.2.
The effects of self-anchoring and self-stereotyping on social identification in the clear (left panel) and the unclear (right panel) group condition (Study3.2). Error bars represent standard errors.

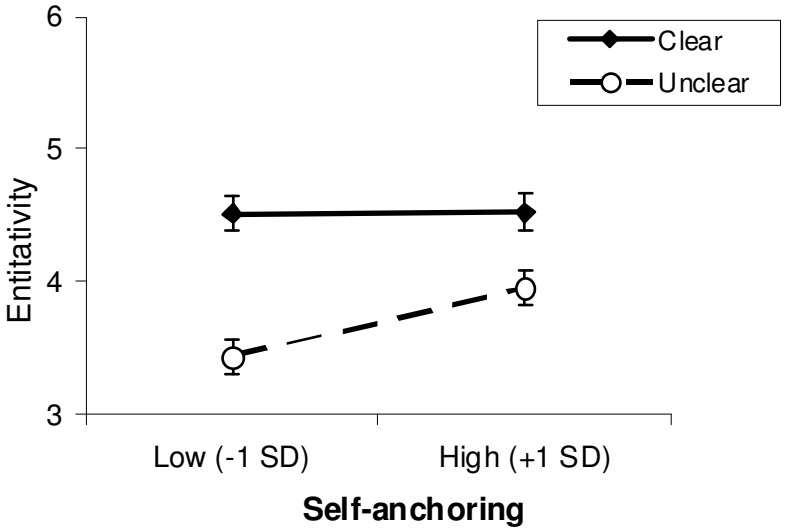


Figure 3.3.
The positive effect of self-anchoring on entitativity as a function of group clarity (Study 3.2). Error bars represent standard errors.

Discussion

Study 3.2 replicated our findings in a real group setting. In addition, we investigated the interplay between self-anchoring and self-stereotyping, and showed that while self- anchoring is positively associated with identification in unclear groups, self-stereotyping is in clear groups. Moreover, we again demonstrate that in unclear groups, self-anchoring enhances perceived entitativity.

It is noteworthy to mention that we only find a main effect for self-stereotyping on entitativity and not the expected interaction effect indicating that self-stereotyping predicts entitativity only in the clear group. Even though our correlational data seems to hint towards such interaction pattern, the regression analysis does not confirm this. This suggests that self-stereotyping may also still play a role in unclear groups when dealing with a firmly established group identity such as nationality. It could be that participants in the unclear group not only use the self, but also the available group stereotypes in search for ways to give meaning to the unclear group (Spears, 2002). Moreover, the fact that we *explicitly offered* Dutch stereotypes (to be able to measure self-stereotyping) may have amplified this tendency to also project group stereotypes onto the self in unclear groups, to restore entitativity levels. Nonetheless, we still find self-anchoring to be most strongly associated with social identification and entitativity in unclear groups, even when taking into account self-stereotyping processes.

General discussion

The current research shows that *how* we identify with groups depends on the clarity of a group's identity content. We provided empirical support for the traditional assumption that self-stereotyping is a cognitive route to social identification (Tajfel & Turner, 1979; SCT, Turner et al., 1987). However, we found its predictive value to be limited to clearly defined groups; self-stereotyping did not convincingly account for the level of identification in unclearly defined groups. Alternatively we demonstrated that the cognitive process explaining identification with unclearly defined groups is self-anchoring. The use of the personal self helps to create a meaningful mental picture of the group and hence to identify.

Furthermore, self-anchoring is associated with an increase in perceived entitativity in unclear groups, up to equal levels as in clear groups. This finding corroborates research showing that the relation between personal self and group image is important for perceived entitativity (Lickel et al., 2000; Rutchick et al., 2008; Krueger et al., 2006). Also, it fits the idea that not only commonality, but also individuality can be a building block for crafting group identities (Postmes, Spears, Lee, & Novak, 2005).

Interestingly, aside from demonstrating the positive association between self-anchoring and both identification and entitativity in unclear groups, we also find in both studies that the absolute level of self-anchoring *decreases* as a function of group clarity (see Table 3.1; minimal group: unclear M =.67, clear M =.34; real group: unclear: M =.20, clear M =.10). This is in line with previous meta-analyses showing that the absolute level of self-anchoring is generally higher in minimal compared to real groups (DiDonato, Ulrich, & Krueger, 2011; Robbins, & Krueger, 2005); the higher the lack of clarity on a group's identity content, the higher self-anchoring levels.

Self-anchoring versus self-stereotyping

There are some controversies in the literature regarding the importance of self-anchoring versus self-stereotyping. Some authors argue for higher importance of self-anchoring compared to self-stereotyping (DiDonato et al., 2011; Krueger, 2007; Robins & Krueger, 2005), while others claim the opposite (Guimond, Chatard, Martinot, Crisp, & Redersdorff, 2006; Latrofa, Vaes, Cadinu, & Carnaghi, 2010). At first glance, this seems contradictory. However, based on our research the differences in the reported relative impact of self-anchoring and self-stereotyping might be caused by differences in group clarity. Indeed, research on self-stereotyping is mainly conducted in groups with clear and prescriptive group norms, while research on self-anchoring mainly relies on minimal groups, with very little available group knowledge. Thus, we conclude that self-anchoring and self-stereotyping need not necessarily be antagonistic, but can be seen as two simultaneously operating mechanisms both underlying social identification levels, depending on group clarity.

Limitations and further research

We want to point to one caveat regarding our studies. Both self-anchoring and self-stereotyping were *measured* rather than manipulated in our research design. Even though previous research suggests that mental overlap is a *precondition* for social identification (e.g., Tropp & Wright, 2001), and we find compelling evidence for this causal relationship in our regression models, we cannot rule out a possible reversed causal path. Yet specifically in the case of self-anchoring in unclear groups, a causal path from identification to self-anchoring seems highly unlikely; it would imply that one would first identify with a group without content, to subsequently provide its content based on self-anchoring.

For self-stereotyping, the causality issue might be more complex. Following our assumption that self-stereotyping predicts social identification, we measured self-stereotyping *prior* to social identification. In contrast, Latrofa and coworkers (Latrofa et al., 2009; Latrofa et al., 2010) claim the reverse causal path and measured self-stereotyping *after* social identification. Yet both studies are correlational, and therefore both do not provide solid evidence for causality on this topic. In future research a direct empirical test should provide more insight in the causal relationship between self-stereotyping and identification.

Finally, one could consider that lack of clarity does not only pertain to the *group level* but also to the *personal level*. While some have a very clear picture of who they are as a person, others do not. This impacts on the cognitive projection processes, as those with high self-concept stability tend to self-anchor more (van Veelen et al., 2011). In future research it might be interesting to simultaneously investigate clarity at the personal and group level for its impact on self-anchoring and self-stereotyping. This could make the picture on how different people identify with different groups still more complete.

Conclusion

People identify with groups even when they are unclearly defined. In these groups, the use of the personal self as an anchor is crucial for social identification. Thus, if Princess Maxima indeed believes that the Dutch identity is unclear or even non-existent, self-anchoring principles explain how she could still identify strongly with the Netherlands.

Notes

1. The terms self-anchoring and social projection are often used inter-changeably in the literature, thereby referring to the process of using the self as a heuristic to make group judgments (e.g., Robbins & Krueger, 2005). For ease of readability we only use the term self-anchoring in the present paper, yet conceptually we consider the two terms as equivalents.

2. We adapted the task for the unclear group identity condition to a subjective one (i.e., liking of paintings) in order to make sure that participants could not make inferences about the meaning of their group based on the task. While this difference in tasks may be a methodological limitation in Study 1, the validity of our approach is confirmed by the replication of our findings in Study 2 where the two conditions are exactly the same besides group clarity.

3. Zero-order profile correlations of self-anchoring and self-stereotyping are included in Table 1 to provide insight in its relation with the dependent variables. The table reveals that the mean zero-order correlations are somewhat higher compared to partial correlations, which are not obscured by item popularity (see De la Haye, 2000; Krueger & Clement, 1994).

Appendix

Trait list ambiguous and (counter) stereotypical traits in Study 3.1 and 3.2

Study 3.1	Study 3.2	
Ambiguous traits	*Ambiguous traits*	*(counter-) stereotypical traits*[a]
Fashionable	Musical	Work-shy (counter)
Environmentally conscious	Vulnerable	Down-to-earth
Jealous	Modest	Planned social life
Businesslike	Creative	Hard worker
Musical	Introverted	Thrifty
Naïve	Flexible	Tolerant towards drugs
Complimentary	Environmentally conscious	Emotional (counter)
Sensitive		
Athletic		
Sportily		
Religious		
Fond of traveling		
Politically involved		
Romantic		
Proud		
Vain		

[a] To ensure an equal amount of variance on both the ambiguous and the stereotypical traits, we also included counter-stereotypical Dutch traits (i.e. traits typically not applicable to the Dutch). Those are referred to as 'counter' in the third column.

Chapter 4

Newcomers' cognitive development of social identification: A cross-sectional and longitudinal analysis of self-anchoring and self-stereotyping[3]

Abstract

Upon joining a new social category, group members strive to establish and maintain high social identification. Thus far, we know relatively little about the cognitive underpinnings of social identification when developing from a new to a well-established group member. The present research investigates the differential impact of newcomers' self-stereotyping (i.e., assimilation of the self to group stereotypes) and self-anchoring (i.e., projection of self-attributes onto the ingroup) on the development of social identification over time. Across two time points during the academic year, first year psychology students (N = 123) filled out a questionnaire on their perceptions about the self, psychology students, and social identification. Cross-sectional and longitudinal analyses confirmed our hypotheses that self-anchoring instigated new group members' social identification, while self-stereotyping instigated social identification once group membership was more well-established. This research emphasizes the interactive role of the personal and social self in the development of social identification.

[3] Chapter based on Van Veelen, R., Hansen, N. Otten, S (2013a). Newcomers' cognitive development of social identification: A cross-sectional and longitudinal analysis of self-anchoring and self-stereotyping. *British Journal of Social Psychology*. (pagination not specified). doi: 10.111/bjso.12038

Imagine the time you finished high school and started studying psychology. How did you develop a bond with this new social category? As a newcomer, you may have thought you had some personal characteristics that would likely make you a good psychologist. At this stage, you may have assumed that who you are as a person would fit with the group. After a while, you likely became more familiar with what psychology students are typically like. At this stage the integration of group stereotypes in your self-concept may have contributed to your group bond.

The example above illustrates that upon joining a new social category, group members undergo a psychological transformation from a new group member to a well-established group member, which shapes their formation of a group bond (Ashforth & Mael, 1989). Generally, new group members' primary concern upon joining a new social category is to attain and maintain strong social identification levels (Worchel, 1998). Such identification not only secures a sense of positive self-esteem, social support and self-definition (Cassidy & Trew, 2001), it also shapes future attitudes and commitment towards the new social category (Worchel, 1998).

To date, surprisingly little is known about the processes that may instigate new group members' social identification and its development over time. Thus far, most studies have adopted a rather static perspective on social identification, focusing on its role at a certain point in time (e.g., Condor, 1996; Ellemers, Spears, & Doosje, 1999), or when switching from one social situation to another (e.g., Markus & Wurf, 1987; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). The studies that do adopt a longitudinal approach to investigate social identification as an outcome variable specifically do so in response to identity threats or unwanted categorizations (Bettencourt, Charlton, Eubanks, Kernaham, & Fuller, 1999; Doosje, Spears, & Ellemers, 2002; Jetten, O'Brien, & Trindall, 2002; Lemay & Ashmore, 2004). In the present research we take a different, more dynamic approach. We investigate how newcomers' formation of cognitive overlap between the self and the ingroup (e.g., Smith & Henry, 1996) impacts on social identification when developing from a new to a well-established group member (irrespective of threat). Our aim is to demonstrate that the cognitive pathways that instigate social identification differ over time.

In order to do so, we focus on first year psychology students' cognitive development of social identification during their first six months at university. An important life change such as the transition to university offers a unique opportunity to investigate longitudinal changes in social identity processes because it places new demands on the cognitive representation of the self-concept relative to the new group (Bettencourt et al., 1999; Markus & Kunda, 1986; Harter, 1999). We assume that this process can be

guided by both the part of the self-concept that is *stable*, such that personality characteristics guide perceptions and behaviors towards the new group (Brissette, Scheier, & Carver, 2002), and by a part of the self-concept that is *flexible* and adapts to the new group's social norms and values (Jetten et al., 2002; Amiot, Blanchard, & Gaudreau, 2008). In a similar vein, Deaux and colleagues (Reid & Deaux, 1996; Deaux, 1993; Ethier & Deaux, 1994) reason that people's self-concept includes both a personal identity, (i.e., idiosyncratic attributes), and a social identity (i.e., shared conception of a social category), and that both may provide meaning to a (new) social category.

Taking this dual view of the self as a starting point, one can also distinguish between two cognitive routes to infer a mental bond between the self-concept and the group (Didonato, Ullrich, & Krueger, 2011; Guimond, Chatard, Martinot, Crisp, & Redersdorff, 2006; Otten, 2005; Otten & Epstude, 2006; van Veelen, Otten & Hansen, 2011; 2012a), namely *self-stereotyping* (Turner et al., 1987) and *self-anchoring* (Cadinu & Rothbart, 1996). We will discuss both social inference processes in further detail below, and argue that the impact of these two cognitive routes on social identification will differ over time.

Cognitive routes to self-group overlap

In general, for people to create a bond with a group, a certain degree of perceived cognitive overlap between the self and the group must be present (Smith & Henry, 1996). More mental overlap between self and group representation indicates higher social identification (Coats, Smith, Claypool, & Banner, 2000; Tropp & Wright, 2001). According to self-categorization theory (SCT; Turner et al., 1987) the general cognitive strategy to create mental overlap is top-down, via *self-stereotyping,* or the assimilation of the self to group prototypes (e.g., Lorenzi-Cioldi, 1991; Simon & Hamilton, 1994; Voci, 2006). Based on the central assumption in social identity theory (SIT; Tajfel & Turner, 1979) that people have a social self-concept (as defined by prototypical group norms and values) and personal self-concept (the unique individual, different from others), SCT posits that when identifying with a social category, the social self becomes salient and the personal self shifts to the background, or *depersonalizes* (Turner et al., 1987; Mullen, Migdal, & Rozell, 2003). Consequently, people come to describe themselves in terms of prototypical group characteristics. This process is called self-stereotyping and implies that self-group overlap is based on

conformity to socially shared, prototypical group norms. Importantly, according to SCT, self-stereotyping is the core process to create self-group overlap, while the personal self has no relevant role to play in the formation of a mental group bond.
Recent research, however, has shown that self-group overlap not only emerges through top-down processes, via self-stereotyping, but also bottom-up, via *self-anchoring*[1] (Cadinu &Rothbart, 1996). Self-anchoring implies the projection of personal self-attributes onto a group. Self-anchoring was first demonstrated in minimal groups to explain why people display ingroup favoritism even towards such arbitrary groups (Cadinu & Rothbart, 1996; Clement & Krueger, 2002; Gramzow, Gaertner, & Sedikides, 2001; Otten & Wentura, 2001). Additionally, research showed that self-anchoring is not only relevant in minimal, but also in real groups (Otten, 2004; Otten & Epstude, 2006). Importantly, in contrast to self-stereotyping, self-anchoring implies that the personal self plays a central role in shaping a bond between the self and the group.

Social identification

Recent research has demonstrated that both the assimilation to group stereotypes (i.e., self-stereotyping) as well as the projection of personal characteristics onto the group (i.e., self-anchoring) may facilitate the level of social identification (van Veelen et al., 2011). Specifically, this research provided the first evidence that when investigating self-anchoring and self-stereotyping simultaneously, both cognitive processes are significantly positively associated to the level of social identification. Further research also demonstrated that it depends on the *type of group* whether either self-anchoring or self-stereotyping works best as a cognitive route to social identification (van Veelen et al., 2012a). Specifically, self-stereotyping is highly dependent on the availability of knowledge of a group's prototypical characteristics (i.e., without such knowledge, there is very little to assimilate the self to), while self-anchoring merely relies on the personal self as a source of inference (Otten & Epstude, 2006; Robbins & Krueger, 2005). As such, research demonstrated that self-stereotyping facilitates social identification mostly in groups in which unobtrusive knowledge of group stereotypes is available, while self-anchoring facilitates the level of identification even in complete absence of such group knowledge (van Veelen et al., 2012a).

Intuitively, this finding may already signal important implications for the

differential impact of self-anchoring and self-stereotyping on new versus well-established group members' social identification.

Cross-sectional impact of self-anchoring and self-stereotyping on identification.

Upon entering a social category, new group members generally know relatively little about their group, its members, and its norms and values (Amiot, de la Sablonniere, Terry, & Smith, 2007).Entering a new group means a time of uncertainty and unfamiliarity (Moreland & Levine, 1989), in which new group members still have a lot to learn about typical group norms and values, and how their group is different from other groups (Levine, Moreland, & Ryan, 1998). Considering this lack of clear knowledge about their group, we assume that new group members mainly rely on their personal self-knowledge to shape a cognitive bond with the group (i.e., *self-anchoring*).

In support for this assumption, prior research revealed that in novel or ill-defined groups, people have a strong tendency to use the self as a source of information to fill the cognitive gaps in a group's representation (Robbins & Krueger, 2005; Otten & Wentura, 2001; van Veelen et al., 2012a). Moreover, in groups lacking clear knowledge of their identity content, self-anchoring rather than self-stereotyping typically predicts the level of social identification (van Veelen et al., 2012a). Assuming that for new group members it is also relatively unclear what the group's identity comprises, our first hypothesis is that upon entering a new social category, self-anchoring (more than self-stereotyping) will be positively associated with new group members' social identification *(Hypothesis 1a).*

After some time new group members have undergone a socialization process, which familiarizes them with the properties of the new social category and turns them into well-established group members (Amiot et al., 2007). At this point, group members have likely developed a rich understanding of the group's stereotypes, and are more accurate in correctly inferring ingroup stereotypes, compared to when they were still newcomers (Park, Kraus, & Ryan, 1997; Ryan & Bogart, 2001). As a consequence, well-established group members' assimilation of the self to group stereotypes should now have a significant relation to social identification levels, while the importance of self-anchoring for well-established group members' level of identification may diminish somewhat (see also van Veelen et al., 2012a). Therefore,

we hypothesize that self-stereotyping (more than self-anchoring) is positively associated with the level of social identification among well-established group members (Hypothesis 1b).

Longitudinal impact of self-anchoring and self-stereotyping on identification.

While self-stereotyping may not profoundly impact on newcomers' initial level of social identification (see Hypothesis 1a), this is not to say that people do not at all engage in self-stereotyping in the beginning of their group membership. Specifically, upon entering an *already existing* social category such as 'psychology students', new psychology students likely already have some ideas about what the group's identity comprises. Yet, the little knowledge that new group members may have upon entering an existing social category is likely not sufficiently internalized and socially validated for self-stereotyping to be diagnostic for newcomers' identification (see also Postmes, Baray, Haslam, Morton, & Swaab, 2006). Only over time, through experience, interaction with, and observation of other ingroup members, the integration of stereotypes in the self-concept may become meaningful and socially validated (Haslam et al., 1998; Smith & Postmes, 2011). Therefore, initial levels of self-stereotyping may have a profound impact on the level of social identification once group membership is well-established. Specifically, those newcomers scoring high on self-stereotyping from the start may have had the opportunity to validate and internalize those stereotypes during the socialization phase, while those newcomers who did not score high on self-stereotyping initially, did not have such an opportunity. Therefore, we hypothesize that newcomers' initial level of self-stereotyping should have a positive, longitudinal impact on identification when group membership becomes more well-established (*Hypothesis 2a).*

At the same time, as the relevance of group stereotypes for social identification increases over time, the relevance of the personal self as a source of inference may diminish somewhat (see Amiot et al,. 2007 for a similar argument). Indeed, prior research has suggested that self-anchoring serves as a *temporal* heuristic to fill in the cognitive gaps in a group's identity representation (Otten & Epstude, 2006). To this end, the personal attributes that newcomers' project onto the new group may likely be less applicable once more and more of the cognitive gaps in the group's identity representation are filled based on internalization of knowledge of group stereotypes (e.g., Robbins & Krueger, 2005). Therefore, while self-anchoring

may predict the level of identification at the beginning of group membership *(see also Hypothesis 1a)*, we do not expect a longitudinal impact of newcomers' self-anchoring on social identification when group membership becomes more well-established (*Hypothesis 2b).*

Study 4.1

The present research investigates the cross-sectional and longitudinal impact of self-anchoring and self-stereotyping on newcomers' social identification. Cross-sectionally, we expect that newcomers' social identification is positively associated with self-anchoring more than with self-stereotyping (Hypothesis 1a), while a reverse pattern is expected for well-established group members' social identification (Hypothesis 1b). Longitudinally, we expect that newcomers' self-stereotyping significantly impacts on social identification once group membership is well-established (Hypothesis 2a) while self-anchoring does not (Hypothesis 2b). To test our hypotheses we asked first year psychology students to fill out a questionnaire about their group membership as psychology student twice: at the beginning of their studies, and six to seven months later towards the end of their first academic year.

Method

Design & Procedure. At the beginning of their first study year, participants were recruited from the psychology program at a large Dutch university. First year psychology students completed an online questionnaire at the start [Time 1 (T1); during the very first weeks of their first semester], and six to seven months later, towards the end of the second semester [Time 2 (T2)]. We chose this particular time gap because in the Netherlands, first year students can decide to quit their studies, while still being fully reimbursed on their college fees. This arrangement ends after the first semester. Since we wanted to avoid a sample including people who may, already at a very early stage, anticipate withdrawal from their group membership, we collected our second data wave towards the end of the second semester. In line with previous research (Amiot et al., 2007), this particular time gap also corresponds to the length of a socialization phase of a newcomer in a group.

The study was introduced as a longitudinal investigation of how individuals build a group bond. It was explained that participation was voluntary and that anonymity and confidentiality would be ensured. To this end, participants were asked to give anonymous identification codes in order to match their data files longitudinally. At both time points, students filled out exactly the same measures and received course credits in return. In addition, to minimize attrition rates two I-pods were raffled among those who participated twice.

Participants. In total, 446 first year psychology students (M_{age} = 19.92, *SD* = 2.68; 334 females) filled out the online questionnaire at T1 at the start of the academic year. At T2, roughly six to seven months later, 123 participants filled out the online questionnaire again (M_{age} = 20.25, *SD* = 2.75; 91 females). A dropout of 323 participants between T1 and T2 indicates a high attrition rate of 72.42%. This can for a good deal be attributed to the fact that psychology students were awarded course credits in exchange for participation. Halfway through the second semester, many psychology students had already attained the required amount of course credits for participating in psychological studies, thereby making participation at T2 less worthwhile. Moreover, each year over 5% of the first year psychology students drops out of college before the second semester starts. Important reasons for dropping out are students' difficulty with studying at an academic level, or students' considerable doubts about their study choice[2].

The data of the 123 participants at T2 could be matched over time and were used for the final analyses.

Measures. The order in which we present our measures resembles the order in which they were presented in the questionnaire.

Self-anchoring. After the general introduction, all participants first rated 19[3] traits on their applicability to the *personal self* on a 9-point Likert scale (1 = not at all applicable; 9 = completely applicable). Subsequently, we made participants aware of their group membership as a psychology student (ingroup salience) and participants rated the same 19 traits again, but this time on their applicability to the ingroup psychology students. We constructed a self-anchoring score based on these 19 trait ratings on the self and the group.

Construction of a self-anchoring score. Measuring self-anchoring in real groups can be quite a challenge (e.g., Otten, 2004; Otten & Epstude, 2006). Most

prior research on self-anchoring relied on minimal group paradigms (MGP). In a MGP, social identities can generally not be derived from pre-existing knowledge on group stereotypes. Hence, it is quite safe to assume that in minimal groups, self-group overlap can only be inferred uni-directionally from the personal self (Gramzow et al., 2001; Otten, 2005). However, in the present study we focus on real groups. Here, social inferences can be based on two sources of knowledge, namely the personal self (i.e., self-anchoring) and the group's stereotypes (i.e., self- anchoring). Therefore, with self-anchoring in real groups, in order to optimally capture the diagnostic value of the self one should limit the interference of group knowledge to a minimum.

As a first step to do so, we made sure that the order of self and group trait ratings was always such that self-ratings *preceded* group ratings. Moreover, trait ratings on the self were always measured *prior* to making the group 'psychology students' salient. In this way, any contamination of personal self-ratings based on the salience of the social category could be minimalized (Otten & Epstude, 2006; van Veelen et al., 2011). Secondly, for the self-anchoring score, we included only traits that were − according to a pilot study – ambiguous in their applicability to psychology students (thus, neither stereotypical nor counter-stereotypical). Research showed that by focusing on traits that are clearly defined for the self, but are ambiguous with respect to their applicability to the group, self-anchoring can be measured most accurately (Otten & Epstude, 2006). Finally, in order to make sure that self-group overlap is not confounded with *valence*, all traits were pilot-tested for being relatively neutral in valence (i.e., around the midpoint of a 7-point scale; 1 = very negative; 7 = very positive).

To obtain a self-anchoring score for each participant, self-group overlap was measured by calculating intra-individual profile correlations based on the 19 traits rated on their applicability to the self and the group (e.g., Otten & Wentura, 2001; van Veelen et al., 2011). In addition, the profile correlations were controlled for item popularity. Item popularity is the general tendency to endorse an item, for example due to social desirability or valence effects. For each trait popularity was calculated as the proportion of positive endorsement of a trait (i.e., scoring 6-9 on the Likert scale; De la Haye, 2000; Krueger & Clement, 1994; see Appendix for the trait list). Individual scores could vary between -1 and 1, and higher scores indicated higher self-anchoring.

Self-stereotyping. While participants were asked to rate the 19 ambiguous traits on their applicability to the group psychology students, we also asked them to rate the group on 15 other traits, pilot tested for being *stereotypical* or *counter-stereotypical*

for psychology students on a 9-point scale (1 = not at all applicable; 9 = completely applicable). Subsequently, participants rated the personal self again. This time, self-ratings were made specifically on the 15 *stereotypical* traits. Analogous to the procedure for self-anchoring, we constructed a self-stereotyping score based on these 15 stereotypical trait ratings on the self and the group.

Construction of a self-stereotyping score. Measuring self-stereotyping in real groups, and disentangling it from self-anchoring is just as challenging as vice versa. With self-stereotyping, in order to optimally capture the diagnostic value of the group's stereotypes one should keep the interference of the personal self to a minimum. As is evident from the previous paragraph, we therefore only used traits that were – according to a pilot study – stereotypical or counter-stereotypical for the group psychology students. Moreover, self-ratings on stereotypical traits were deliberately measured *after* the group category was made salient in order to make sure that the group was available as a heuristic to define the self. This procedure was adapted from earlier research showing that self-stereotyping is most prevalent when it is based on stereotypical rather than ambiguous traits, and when group ratings precede self-ratings (Latrofa, Vaes, Cadinu, & Carnaghi, 2010; Guimond et al., 2006).

Again, intra-individual profile correlations were calculated to capture the level of overlap between group and self-ratings on the 15 stereotypical traits (Latrofa et al., 2011; van Veelen et al., 2011). Moreover, the stereotypical traits we also relatively neutral in valence, and profile correlations were controlled for by item popularity.

Taken together, this procedure allowed us to measure self-anchoring and self-stereotyping within-participants in one research paradigm (van Veelen et al., 2011; 2012a).

Social identification. Social identification was measured with 7 items from the self-investment identification scale by Leach et al. (2008) on a 7-point Likert scale (1 = I do not agree; 7 = I totally agree)[4]. Example items are 'I feel a bond with psychology students' and 'I am glad to be a psychology student' (α_{T1} = .83; α_{T2} = .89).

Results

Descriptive statistics. Table 4.1 displays longitudinal changes in means and standard deviations of all variables in the study. Repeated-measures analysis showed that the mean levels of self-anchoring and self-stereotyping do not change over time. When

entering an already established group (such as psychology students) both processes seem to be present at the beginning of group membership and also when group membership is more well-established. Furthermore, social identification did not change significantly over time (see Table 4.1). Importantly, while repeated measures analyses revealed no mean level changes in identification over time, this does not imply that the process explaining *how* newcomers identify with groups across time points may not change either (see also Amiot, Terry, Wirawan, & Grice, 2010). Next, we will therefore focus on the correlations between social identification, self-anchoring, and self-stereotyping to investigate how the different cognitive processes are associated with social identification at different time points.

Table 4.1
Means (M), Standard Deviations (SD) and Mean changes over Time

	Time 1		*Time 2*				
	M	*SD*	*M*	*SD*	*F (1, 122)*	*p*	η_p^2
Self-anchoring	.21	.33	.19	.36	.40	.527	.00
Self-stereotyping	.21	.35	.18	.38	.51	.479	.00
Social identification	5.09	.84	5.08	.97	.00	.97	.00

Cross-sectional analysis. Table 4.2 displays cross-sectional zero-order correlations and partial correlations between the social inference variables self-anchoring (SA) and self-stereotyping (SST) and the identification variables. The partial correlations constitute correlations between self-anchoring and other variables in the model, controlling for self-stereotyping and vice versa. In order to investigate the unique impact of self-anchoring and self-stereotyping on social identification, and secure the discriminant validity of both social inference processes, investigating partial and zero-order correlations is important (see also van Veelen et al., 2011).

As expected, inspection of both zero-order and partial correlations showed that at T1, self-anchoring significantly positively associated with social identification while self-stereotyping did not. In contrast, at T2, zero-order correlations show that *both* self-anchoring and self-stereotyping were significantly positively associated with social identification. Yet, based on the partial correlations, when controlling for self-anchoring, only self-stereotyping was (marginally) significantly correlated with social

identification (*pr* = .17, *p* = .066), while the correlation between self-anchoring and social identification dropped to non-significance (*pr* = .12, *p* = .21). This difference between zero-order and partial correlations is likely due to the fact that self-anchoring and self-stereotyping have more overlap in explained variance at T2 ($r_{\text{self-anchoring.self-stereotyping}}$ = .57) compared to T1 ($r_{\text{self-anchoring.self-stereotyping}}$ = .35).

Table 4.2
Cross-Sectional Zero-Order Correlations and Partial Correlations at T1 and T2 of all Variables

		Self-anchoring	Self-stereotyping	Social identification
Self-anchoring	*r*	-	.35***	.27**
	pr[a]	-	-	.25**
Self-stereotyping	*r*	.57***	-	.12
	pr[a]		-	.03
Social identification	*r*	.25**	.27**	-
	pr[a]	.12	.17†	-

Note ***p <.001, **p <.01, *p <.05, †p <.10. Cross-sectional correlations above the diagonal represent T1, and cross-sectional correlations below the diagonal represent T2.

[a] All partial correlations are controlled for by the respective other projection process. Thus, all *pr* correlations with self-anchoring are controlled for the effect of self-stereotyping and vice versa.

Overall, this pattern of results confirms our expectation that self-anchoring is a more important process associated with the level of social identification at T1 (*Hypothesis 1a*), while self-stereotyping becomes a more important process related to the level of social identification at T2, once group membership is well-established (*Hypothesis 1b).*

Longitudinal analysis. In a next step, we investigated the impact of self-anchoring and self-stereotyping on social identification longitudinally. We expected that self-stereotyping at T1 would significantly predict the level of identification at T2 (*Hypothesis 2a*), while self-anchoring at T1would not significantly impact on the level of identification at T2 (*Hypothesis 2b).* To investigate the longitudinal relationship between the variables, cross-lagged path analyses were performed, using AMOS to yield maximum likelihood parameters. In our analytical approach, we estimated our

hypothesized model (Model 1) including the predicted longitudinal effect of self-stereotyping at T1 on social identification at T2. To provide goodness of fit indices for our model, we used multiple criteria, namely the traditional χ^2 index, the Root Mean Square Error of Approximation (RMSEA), which should approximate .06 or less, and the Non-Normed Fit Index (NNFI), the Comparative Fit Index (CFI) and the Incremental Fit Index (IFI) should all be above .90 (Hu & Bentler, 1999).

In Model 1 (see Figure 4.1), we estimated the expected associations between the six variables in our model. First, the curved, double-arrowed lines in the model indicate that all T1 variables were allowed to correlate cross-sectionally, and that all error terms from the endogenous variables were allowed to correlate as well. Secondly, the horizontal lines indicate the *autoregressive effects* between self-anchoring at T1 and T2, self-stereotyping at T1 and T2, and social identification at T1 and T2. These parameters signal the longitudinal stability of the measures. Third, the diagonal lines in our model represent the *cross-lagged effects*. We estimated cross-lagged paths between self-anchoring and self-stereotyping across time points, as we assume that those who seek to create mental self-group overlap, will likely do so by inferring this overlap via both directional cognitive pathways (see also Cadinu & De Amicis, 1999; van Veelen et al., 2011). Most importantly, we estimated the cross-lagged path from self-stereotyping at T1 social identification at T2 to test hypothesis 2a. Estimations of the cross-lagged parameters in the model control for the autoregressive effects. This implies that any significant cross-lagged effect, reflecting the longitudinal influence that variable X at T1 exerts on variable Y at T2, indicates predictive power over and above the stability of these measures.

Model 1 obtained good fit, χ^2 =3.01, p =.39, df = 3, *RMSEA* = .01, *NNFI* = .98, *CFI* = 1.00, *IFI* = 1.00 (see Table 4.3). Results on the parameter estimates (see Figure 4.1) showed that all autoregressive paths were significant (p <.001). Moreover, the cross-lagged paths between self-stereotyping at T1 and self-anchoring at T2 (β = .22, t = 272, p =.006) and vice versa (β = .15, t = 1.77, p =.077) were significant or marginally significant. Most importantly, confirming Hypotheses 2a, self-stereotyping at T1 significantly predicted identification at T2 (β = .19, t = 2.35, p =.019).

Table 4.3
Model fit statistics for hypothesized cross-lagged path analysis (Model 1) and two alternative models (Model 2 and 3).

	Fit statistics									
	χ^2	*df*	*p*	*RMSEA*	*NNFI*	*CFI*	*IFI*	$\Delta\chi^2$	*Δdf*	*Δp*
Model 1[a]	3.03	3		.01	.98	1.00	1.00			
Model 2[b]	2.02	2		.00	.98	1.00	1.00	1	1	*ns.*
Model 3[c]	1.07	2		.00	.99	1.00	1.00	1.96	1	*ns.*

[a] Hypothesized model: longitudinal impact of Self-stereotyping T1 on Social Identification T2
[b] Alternative model with longitudinal impact of Self-anchoring T1 of Social Identification T2 added
[c] Alternative model with reversed causal path from Social identification T1 on Self-stereotyping T2 added

Subsequently, we tested two alternative models to provide evidence for the robustness of our hypothesized model. In Model 2, we adjusted Model 1 such that we added a cross-lagged path from self-anchoring at Time 1 to identification at Time 2. Here we wanted to show that adding self-anchoring as a longitudinal predictor of identification would not result in significantly better model fit, compared to the more parsimonious Model 1 (see also Kline, 2011). The goodness-of-fit indices for this third model indicated good model fit (see Table 4.3), but not significantly better than Model 1 ($\Delta\chi^2$ = 1.00, Δdf = 1, *ns.*). Moreover, confirming Hypothesis 2b, the cross-lagged path between self-anchoring at T1 and identification at T2 was not significant (β = -.01, *ns.*). Hence, self-anchoring (T1) did not have a longitudinal impact on social identification (T2).

In a second alternative model (Model 3), we aimed to rule out a potential reversed causal pathway between social identification and self-stereotyping, because in the social identity literature (e.g., Tajfel & Turner, 1979; Turner et al., 1987) social identification is often perceived as a predictor of self-stereotyping (see also Haslam, Oakes, Reynolds, & Turner, 1999). However, the additional cross-lagged path from social identification at T1 to self-stereotyping at T2 did not result in significantly better model fit, compared to the more parsimonious Model 1 ($\Delta\chi^2$ = 1.96, Δdf = 1, *ns.*; see Table 3). Moreover, the cross-lagged path between identification at T1 and self-stereotyping at T2 was not significant (β = .11, *ns.*).

Taken together the cross-lagged path analyses in Model 1 confirmed our hypotheses and fitted the data most optimally, when tested against several alternative models.

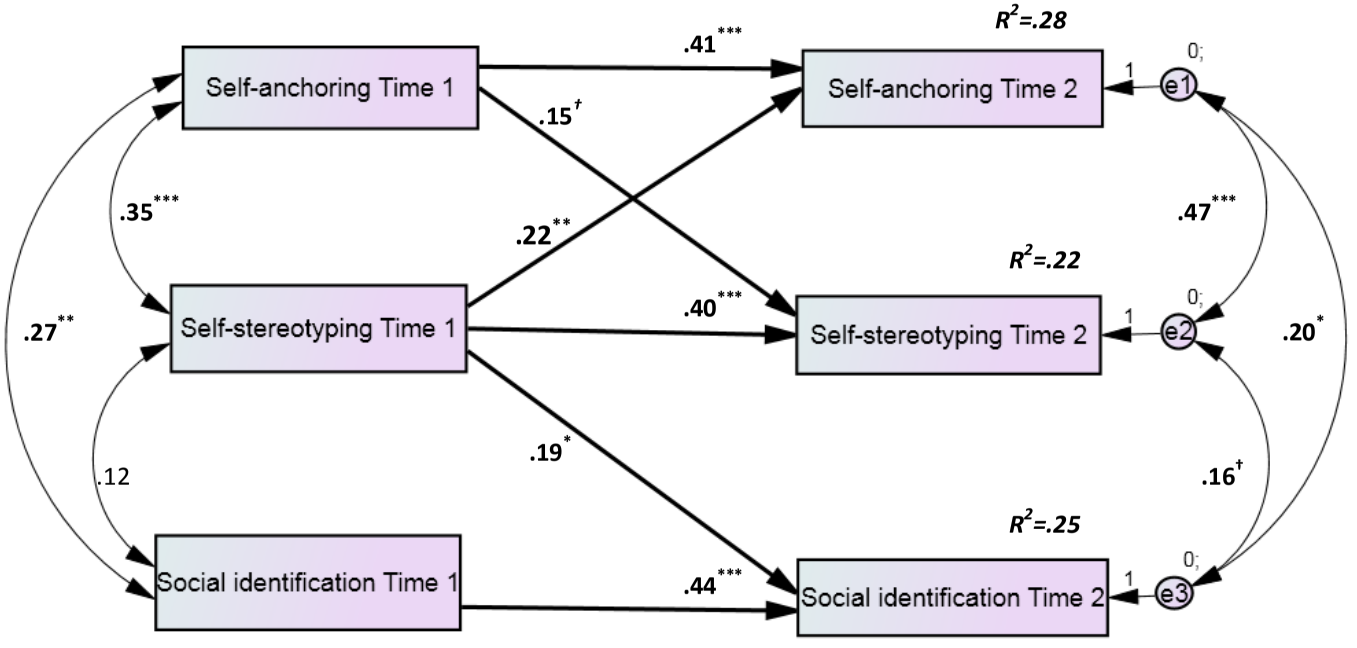


Figure 4.1:
Parameter estimates in the cross-lagged path model (Model 1) testing the longitudinal prediction of Self-stereotyping at T1 on Social identification at T2. Note: Rectangles indicate measured variables. Small circles reflect residuals (e); bold numbers above endogenous variables represent amount of variance explained (R^2). Unidirectional arrows depict autoregressive and cross-lagged paths. Standardized maximum-likelihood parameters are used. Bold estimates are statistically significant at $^{\dagger}p < .10$ (marginal); $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$ (two-tailed).

Discussion

In this research we provided the first empirical evidence showing that new and well-established group members' social identification is instigated by different cognitive pathways. Specifically, our cross-sectional analysis revealed that newcomers' self-anchoring (and not self-stereotyping) was positively associated with social identification, while well-established group members' self-stereotyping (and not self-anchoring) was positively associated with social identification. Moreover, self-anchoring only had a relatively short-lived impact on newcomers' social identification: Using the self as a heuristic to fill cognitive gaps in a group's representation fostered social identification as a newcomer, but no longitudinal effects of newcomers' self-anchoring on social identification levels at Time 2 were revealed. These findings are in line with earlier work showing that the impact of self-anchoring on social identification is especially pronounced in ill-defined group situations, but attenuates once knowledge on the group's identity content increases (van Veelen et al., 2012a).

In contrast, for self-stereotyping cross-sectional analysis revealed no effect of this process on newcomers' social identification, but it did on well-established group members' identification. Moreover, results from our cross-lagged path analyses revealed that newcomers' self-stereotyping did have a long-term effect on social identification: Self-stereotyping among newcomers became diagnostic for the level of social identification once group membership was well-established. These findings are line with previous research (Haslam et al., 1998; Smith & Postmes, 2011) showing that only through experience with, interaction with, and observation of other ingroup members, stereotypes can become meaningful and socially validated as an integrated part of the self.

In addition, while our data provide clear evidence for a differential impact of self-anchoring and self-stereotyping on identification among new and well-established group members, we also find that the prevalence of both social inference processes is similar across time points, and that both are consistently positively correlated to each other. While at first glance these findings may seem hard to reconcile, this pattern of results actually fits nicely with our argument and with earlier research. Specifically, in real groups, both self-anchoring and self-stereotyping have been shown to form cognitive means to the same end (i.e., self-group overlap; Cadinu & De Amicis, 1999; van Veelen et al., 2011). This implies – in line with our results – that they should not be negatively interdependent, but should rather correlate positively with each other. At the same time, the *relative impact* of the two processes on identification has been shown

to differ depending on the group context (see van Veelen et al. 2012a). In this study, we again find such moderating effect, namely depending on the novelty of group membership.

Theoretical implications

With the current research, we provide deeper understanding of the cognitive processes that guide group members' psychological transformation from a newcomer in a group to a well-established group member. To our knowledge, this is the first empirical test to show the importance of an integrative and dynamic approach to the relevance of the personal self (i.e., self-anchoring) and the social self (i.e., self-stereotyping) on the cognitive development of social identification among newcomers in groups. Specifically, our findings reveal that while newcomers mostly rely on the use of personal characteristics as an anchor to give meaning to and affiliate with their group, well-established group members also rely on a part of the self-concept that is flexible and adaptable to the social context, namely the social self. Such innovative insight empirically supports earlier work suggesting longitudinal changes in the cognitive integration of new social identities in the self (Amiot et al., 2007). Moreover, it builds on prior research showing that the role of group stereotypes, their social validation, and integration in the self becomes increasingly important for social identity processes as group membership becomes more well-established (Ryan & Bogart, 2001; Haslam et al., 1998).

On a more general note, our research contributes to the idea that the social and personal self may not necessarily be two qualitatively distinct, antagonistic entities (e.g., Tajfel & Turner, 1979; Turner et al., 1987), but may rather be intermingled in the process of social identification (e.g., Deaux, 1993; Reid & Deaux, 1996; Jetten & Postmes, 2006). The personal and social self may even grow closer together over the course of group membership, as our data shows an increase in the positive relation between self-anchoring and self-stereotyping over time. This finding may provide a valuable starting point on research broadening our understanding of when and how our personal and social selves may collide (Swann, Jetten, Gomez, Whitehouse, & Bastian, 2012).

Limitations and Future research

In our research we examined both cross-sectional and longitudinal changes in the development of social identification. This approach speaks to the importance of combining and differentiating between cross-sectional and longitudinal predictors of social phenomena (Bateman & Strasser, 1984; Meyer, Bobocel & Allen, 1991), and helps us to understand the dynamic between short-term and long-term instigators of identification at different phases during group membership. Longitudinally, our research model also allows causal inferences to be made regarding the development of group affiliations over time. In particular, our cross-lagged path analyses provided empirical evidence for our proposed causal path from self-stereotyping at T1 to identification at T2, rather than vice versa.

However, based on our cross-sectional analyses a causal path from self-anchoring and self-stereotyping to social identification cannot be unequivocally established. In the case of self-anchoring, particularly in new groups, it seems intuitively most likely that self-anchoring serves as a predictor of social identification; it makes sense to first provide content to a relatively unknown group identity before being able to establish an affective group bond. Yet in the case of self-stereotyping the causality issue might be more complex. Specifically, in contrast to our assumptions, social identity theorists would argue that in a situation in which a group identity is highly salient, high identifiers are particularly motivated to self-define in terms of group stereotypes (Haslam, Oakes, Reynolds, & Turner, 1999; Turner et al., 1987; Spears et al., 1997). We agree that situational salience of a group's identity may enhance the tendency to self-define as a stereotypical group member. Importantly however, the reason why we chose for the reversed causal order in our model is because we aimed to understand how newcomers' general level of identification with groups develops, independent of situational salience. Therefore we consider self-anchoring and self-stereotyping as cognitive processes explaining identification. Combined with the outcomes of our longitudinal analyses, we conclude that it is highly plausible that self-stereotyping can indeed function as a predictor of social identification.

In this research, we worked to disentangle a self-stereotyping from a self-anchoring process in real groups. Although the employed method has been successfully applied before (van Veelen et al., 2011; 2012a; Latrofa et al., 2010), and is rooted in prior research focusing on self-anchoring and self-stereotyping measures (e.g., Cadinu & de Amicis, 1999; Otten & Wentura, 2001; Otten & Epstude, 2006;

Guimond et al., 2006), we acknowledge that we cannot completely rule out the possibility that the self-group overlap captured by a self-stereotyping score, may also pick up slightly on a self-anchoring process and vice versa. Particularly considering that the self is one of the most rich and readily available sources of knowledge (e.g., Krueger, 2007; Clement & Krueger, 2000) it may be nearly impossible to completely rule it out as alternative source of inference. However, the traits to measure both processes were carefully selected based on psychology students' ratings on what they considered conventionally shared stereotypes or what they considered ambiguous to psychology students. Thus, despite potential individual differences in how stereotypical or ambiguous traits were perceived, we are quite confident about the internal validity of our measures. In addition, a further strength of our approach to the data analyses is that both processes were investigated in one research design (partial correlations, path analysis). This also ensures that any variance explained by self-anchoring, was controlled for by self-stereotyping and vice versa.

Our longitudinal investigation of social identification processes is attuned to newcomers upon entering an *already existing social category*. Such categorical groups exist largely as cognitively shared abstractions and as such, investigating the cognitive representations of the self and the group in such context is highly relevant. However, we want to stress that our investigation is significantly different from the research devoted to studying the formation of interactive or small groups (e.g., Lickel, Hamilton, & Sherman, 2001; Prentice, Miller & Lightdale, 1994; Tuckman, 1965; Jans, Postmes, & van der Zee, 2012**).** Here, there may likely not be any prior knowledge on group stereotypes, and group norms and values have to evolve entirely through group interaction. Possibly, the role of self-anchoring relative to self-stereotyping might even be more relevant at the beginning of group membership in such groups. We therefore encourage future research on cognitive development of self-group relations in these types of groups.

Conclusion

This paper provides the first empirical evidence for the differential impact of self-anchoring and self-stereotyping on newcomers' social identification, depending on the *length* of their group membership. Such cognitive insight in how newcomers' social identification develops over time is highly valuable, and denotes the importance of a dynamic view on the role of the personal and social self at different stages of group membership. In addition, from a practical point of view, insights of this study may

help to guide those, who enter new groups (schools, work, and new neighborhoods), in attaining a strong sense of social identification. In optimizing this process, we recommend an integrative approach taking advantage of both the more stable (personal) and flexible (social) self. Specifically, providing newcomers the opportunity to project their personal self onto the group's identity seems pivotal as a first cognitive basis to build up a group bond, while assimilation to group's norms and values may be more relevant as time progresses.

Notes

1. The terms self-anchoring and social projection are often used inter-changeably in the literature, thereby referring to the process of using the self as a heuristic to make group judgments (e.g., Robbins & Krueger, 2005). For ease of readability we only use the term self-anchoring in the present paper, yet conceptually we consider the two terms as equivalents.

2. In addition, we tested whether the attrition of participants was related to the level of social identification at T1 (Little, Lindenberger, & Maier, 2000). A univariate analysis of variance (ANOVA) revealed that participants who dropped out scored lower (M = 4.83, SD = .95) on social identification than those who stayed in the sample (M = 5.10, SD = .84), $F(1, 444) = 6.99$, p =.009, η_p^2 = 015. Although this finding corresponds to the fact that the dropout sample at T1 contains students who may have considerable doubts about their study choice, we should also interpret this effect with some caution given that the absolute difference between the means is very small, as well as the effect size of the F test.

3. Initially, we included 20 traits to measure self-anchoring, however, the trait 'mathematical' was eliminated from the score, because it turned out to be counter-stereotypical for psychology students and not ambiguous.

4. To measure social identification, we specifically focused on the self-investment subscale by Leach et al. (2008), because following recent work by Postmes, Haslam, and Jans (2012) this captures the essence of social identification, defined as the positive emotional valuation attached to one's group membership. Indeed, Postmes et al. (2012) showed that the single-item "I identify with my group" relates most strongly to the items of the self-investment scale. In contrast, it relates less to self-definition items, which focus on perceptions of similarity between group members, rather than on the emotional significance an individual attaches to the group.

Appendix

Ambiguous and stereotypical trait list

Ambiguous traits	Stereotypical traits
Sweet tooth	Sensitive
Economical	Reader (books)
Handy	Curious
Environmentally conscious	Thoughtful
Mysterious	Social
Insecure	Emotionally intelligent
Extravagant	Concerned for others
Religious	Interested in others
Vain	Self-critical
Musical	Emotional
Nature lover	Good listener
Artistic	Self-assured (counter)
Tidy	Thinker
Irritable	Talker
Sporty	Empathetic
Animal lover	
Theatrical	
Fond of traveling	
Politically involved	

Chapter 5

A personal touch to diversity: Self-anchoring increases minority members' identification in a diverse group[4]

Abstract

In diverse groups, minority members often indicate lower levels of identification and perceived acceptance than majority members. To date, we know relatively little about how the cognitive definition of the self may impact on identification with a diverse group. In this research, we argue that when minority members shape a cognitive group bond based on the personal self (i.e., self-anchoring) rather than the social self (i.e., self-stereotyping) this may boost their level of identification and perceived value in diversity. To test this, we assigned participants to a majority or minority position in a diverse group and manipulated self-anchoring and self-stereotyping via mindset priming (plus a control condition). As expected, only minority, but not majority members' self-anchoring led to higher identification and value in diversity compared to self-stereotyping (and the control condition). Thus, a focus on the personal self in shaping a cognitive relation with a group enables minority members to belong while being different.

[4] This chapter is based on Van Veelen, R., Otten,. S., & Hansen (*2012b*). A personal touch to diversity: Self-anchoring increases minority members' identification in a diverse group. *Group processes and Intergroup Relations* (pagination not specified) doi:10.1177/1368430212473167.

Western societies are increasingly diverse. Developments in globalization, international mobilization, and emancipation have led to a rapid influx of cultural, ethnic, and gender minority groups within majority-dominated work floors, schools and neighborhoods. To facilitate minority members' inclusion in diverse groups, researchers and policy makers have put great effort in implementing pro-diversity programs. Yet, despite such efforts, research shows that minority members identify less with diverse groups compared to majority members (Guillaume, Brodbeck, & Riketta, 2012), have lower levels of self-esteem regarding their group memberships (Schmader, Major, & Gramzow, 2001), and have less positive expectations about whether diversity will be valued (Tropp & Bianchi, 2006). Therefore, research aiming to improve minority members' sense of inclusion in diverse groups is highly important.

A cognitive perspective on how people adapt to social diversity provides valuable insight into why identification with a diverse group can be a challenge. Specifically, people have a natural preference for homogeneity and simplicity (Caporael, 1997). This preference manifests itself in people's automatic tendency to divide the world into simple 'us' and 'them' categories (Allport, 1954; Tajfel, 1974, Turner, Hogg, Oaks, Reicher, Wetherell, 1987). Within a matter of milliseconds people are able to differentiate between those who are similar, and those who are different (Stangor, Lynch, Duan, & Glass, 1992). While advantageous in ancient monocultures in order to rapidly distinguish friend from foe, this similarity-based categorization is clearly disadvantageous in today's Western societies where diversity is omnipresent (Crisp & Meleady, 2012).

Prior research has already extensively investigated how cognitive redefinitions of diverse *groups* may decrease subgroup salience and increase minority members' sense of inclusion, for example based on a common (Dovidio, Gaertner, & Saguy, 2009), complex (Wenzel, Mummendey, & Waldzus, 2007) or dual ingroup identity (Dovidio, Gaertner, Shnabel, Saguy, & Johnson, 2010). Surprisingly, relatively little is known about the cognitive definition of the *self* in relation to diverse groups (see also Bodenhausen, 2010). Therefore, the aim of the current research is to investigate how cognitive definitions of the *self* in relation to a diverse group may impact on minority and majority members' *social identification* and *perceived value in diversity*. Importantly, these two factors form key determinants for successful functioning in diverse groups (e.g., Haslam, van Knippenberg, Platow, & Ellemers, 2003; van Knippenberg, Haslam, & Platow, 2007).

The psychological basis for social identification is rooted in the strength of the cognitive relationship between the self and the group (Tropp & Wright, 2001). This relationship can either be inferred from the *personal self* or the *social self* (van Veelen, Otten & Hansen, 2011). We will argue that using the personal self as an anchor to create a relation with a diverse group (i.e., self-anchoring; Cadinu & Rothbart, 1996), rather than using the social self (i.e., self-stereotyping; Turner et al., 1987) will benefit minority members' identification with diverse groups and their perceptions that diversity will be valued in the group, while for majority members both processes will work equally well.

Cognitive definitions of self in relation to a group

According to Self-Categorization Theory (SCT; Turner et al., 1987), *self-stereotyping* is the cognitive process that links the self to an ingroup. SCT argues that people's self-concept comprises a social self (i.e., the prototypical features of the groups one belongs to) and a personal self (i.e., the unique individual, different from others), both existing at opposite ends of the same continuum. When people self-stereotype, their social self becomes salient and their personal self shifts to the background, or *depersonalizes*. Consequently, people come to describe themselves in terms of prototypical group characteristics. Thus, self-stereotyping implies self-group overlap based on assimilation to ingroup prototypes.

In contrast, *self-anchoring*[1], implies the projection of *personal* characteristics onto the ingroup (Cadinu & Rothbart, 1996). Therefore, self-anchoring is the exact opposite process from self-stereotyping. For example, if I perceive myself as a 'creative' person, I may project this onto my ingroup and come to perceive the ingroup to be 'creative' as well. Importantly, with self-anchoring the personal self plays a central role in shaping a cognitive self-group relation (e.g., Cadinu & Rothbart, 1996; Krueger, 2007; Otten, 2002; Otten & Wentura, 2001).

In recent research, self-anchoring and self-stereotyping have been investigated simultaneously for their distinct impact on *social identification* (van Veelen et al., 2011). Evidence was provided that social identification can rely on both the projection of group prototypes onto the self (i.e., self-stereotyping), as well as the projection of personal characteristics onto the group (i.e., self-anchoring). Building on this research, we apply self-stereotyping and self-anchoring to a more complex group context, comprising a minority and majority subgroup, and investigate the impact on *social identification.*

Additionally, we investigate the impact on *perceived value in diversity*. Research showed that how people define the self in relation to a group does not only impact on social identification, but may also shape perceptions of what the group's identity is like (van Veelen, Otten, & Hansen, 2012a). Therefore, in the context of diverse groups, self-anchoring and self-stereotyping may affect minority and majority members' perceptions of whether diversity is seen as a valuable asset to the group's identity (van Knippenberg et al., 2007). Importantly, the projection processes we investigate always pertain to the *self* in relation to the *superordinate* group as our aim is to investigate identification and value in diversity with a diverse group as a whole.

Self-anchoring and self-stereotyping in diverse groups

When subcategories within diverse groups are highly cognitively accessible (e.g., gender or ethnicity) this leads to an accentuation of differences between subgroups, relative to differences between individuals (i.e., principle of meta-contrast; e.g., Oakes, Haslam & Turner, 1994; van Knippenberg, de Dreu & Homan, 2004; Wittenbrink, Hilton & Gist, 1998). Self-stereotyping can be assumed to contribute to this tendency, because it has been shown to increase intergroup differentiation and bias (e.g., Simon, Hastedt, & Aufderheide, 1997; Guimond, Chatard, Martinot, Crisp, & Redersdorf, 2006). In contrast, self-anchoring likely contributes to the perception that in diverse groups, individuals are just as different (or similar) from each other as subgroups are. Indeed, research shows that in inclusive groups, people can project personal attributes to the higher order inclusive category almost as strongly as they project to the local subcategory (Krueger & Clement, 1996; Krueger & Zeiger, 1993, Riketta & Sacremento, 2008).

Hence, we assume that the extent to which group members perceive subgroup categories as diagnostic for the diverse group depends on the activation of either the social or the personal self (cf; Turner & Oakes, 1989). While self-stereotyping seems to emphasize similarity-based subgroup boundaries (Oakes et al., 1994), self-anchoring seems to de-emphasize such boundaries and focus on the individual in the group instead (Krueger & Didonato, 2008). What consequences does this have for majority and minority members' social identification and perceived value in diversity in diverse groups?

Social identification in diverse groups

For majority members, we expect self-stereotyping to be an effective way to identify with a diverse group. Specifically, in a diverse group the characteristics prototypical for a majority subgroup are generally also considered to be prototypical for the diverse group as a whole (Wenzel et al., 2007). Consequently, there is a fit between the prototypes of the majority subgroup and the overarching identity, which allows for a cognitive definition of the self in a diverse group based on assimilation to group prototypes. At the same time, reliance on self-anchoring should also lead to successful identification for majority members, because each individual has a personal self at his/her disposal which can be used to cognitively define the self in relation to an inclusive, diverse group (Krueger & DiDonato, 2008) and to identify with the group (van Veelen et al., 2011).

In contrast, minority members are typically not seen as prototypical group members in diverse groups, nor do they perceive themselves as such (Waldzus, Mummendey, Wenzel, & Boettcher, 2004). Hence, there is a misfit between the minority subgroup and the prototypes of the overarching identity. Consequently, it can be expected that minority members' tendency to assimilate to group prototypes is unlikely (Sarason et al., 1991) and possibly also undesirable as it implies non-acknowledgement of the minority identity in the diverse group. Hence, self-stereotyping likely hinders identification with a diverse group, as it emphasizes that minority members deviate from group prototypes. With self-anchoring however, a cognitive self-group relation can be inferred independently from conformity to group prototypes. Instead, the personal self can be used to directly infer a link with the diverse group (e.g., Krueger & DiDonato, 2008; Krueger & Zeiger, 1993). Consequently, minority members may recognize the arbitrariness of social subcategories and identify with the diverse group based on who they are as individual group members.

Taken together, we hypothesize that for minority members in diverse groups self-anchoring will lead to higher identification compared to self-stereotyping, while for majority members no differences will emerge in the level of identification depending on the type of projection process (Hypothesis 1).

Value in diversity

Additionally, we investigate the impact of self-anchoring and self-stereotyping on minority and majority members' perceptions of the group's identity representation (van Veelen et al., 2012a), specifically on their *perceived value in diversity*. Prior research on diversity in organizations has shown that a focus on (category-based) similarity hinders the perception that diversity can be a valuable asset to a group's identity (van Knippenberg et al., 2007), while a focus on individual qualities of group members bolsters perceived value in diversity (Homan, Greer, Jehn, & Koning, 2010). Based on this research, we assume self-stereotyping to hinder perceived value in diversity, because it accentuates similarity-based categorizations (e.g., Turner et al., 1987). In contrast, we assume self-anchoring to foster perceived value in diversity because it accentuates the role of the individual, and decreases the relevance of similarity-based subgroup categorizations within diverse groups (Krueger & Didonato, 2008). Considering that minority members are typically more aware of their relative position in a diverse group (Major & O'Brien, 2005) and generally indicate lower expectations about value in diversity than majority members (Tropp & Bianchi, 2006), we hypothesize that the positive effect of self-anchoring (compared to self-stereotyping) on value in diversity is especially pronounced among minority members, while less so among majority members (*Hypothesis 2*).

Study 5.1

In the present study we investigate how self-stereotyping and self-anchoring impact on minority and majority members' identification and perceived value in diversity in a diverse group. We will focus on a *numerical* minority or majority position in a newly formed diverse team based on gender. Moreover, instead of measuring self-anchoring and self-stereotyping, as has been done in previous studies (e.g., van Veelen et al., 2012a), we *manipulate* both projection processes based on mindset priming. Mindset priming has proven to be an effective tool to impact on inter- and intragroup perceptions and attitudes (e.g., Corcoran, Hundammer, & Mussweiler, 2009). To our knowledge, we are the first to apply this method to prime the directional route to self-group overlap, and to experimentally test the differential impact of self-anchoring versus self-stereotyping on minority and majority members.

In addition, in order to locate a base-rate level of identification and value in diversity among minority and majority members in a diverse team, we also included a control condition. Research has shown that in newly formed diverse teams – as is the focus of our study – the most obvious social subcategories (such as gender) automatically shape perceptions of category similarity (Zellmer-Bruhn, Maloney, Bhappu, & Salvador, 2008). Therefore, it is a plausible assumption that in our study self-stereotyping, as a similarity-based inference process, forms the default to create self-group overlap. If so, then self-anchoring may facilitate minority group members' identification and value in diversity relative to *both* a self-stereotyping *and* a control condition. Although this is not an essential part of our hypotheses, we additionally tested this assumption.

Method

Participants & Design. One-hundred-and-sixty native Dutch students (M_{age} = 20.78; *SD* = 2.58; 110 women) participated in our study and received study credits or 6 Euros in return. The study had a 2 x 3 between-subjects design in which we manipulated relative *group size* (minority versus majority) based on gender, and *projection* (self-anchoring versus self-stereotyping versus control condition). Our dependent measures were social identification and perceived value in diversity within the group.

Procedure. Upon arrival in the laboratory, participants were placed in separate cubicles and the experimenter told them they would participate in a study on 'first impressions and team effectiveness in virtual teams'. Furthermore, they were told that they would be connected to five other team members currently participating in the lab via the computer. A picture was taken of each participant, ostensibly to be able to form an impression about the team members. The experimenter left the cubicle while participants read that the aim of the study was to investigate first impressions and gender differences in virtual teams engaging in an online brainstorming task. Participants were then connected to the team network and waited until the experimenter returned with a sheet with six printed pictures: one of the participant, and five of the alleged other team members. In fact, the other pictures were from the Radboud Faces Database (Langner et al., 2010).

Manipulation minority/majority position. We manipulated a minority or majority position in the diverse team based on relative subgroup size, by assigning participants to either a numerical minority or majority position in the diverse group based on gender. Participants were shown their relative position in the team, based on the sheet with pictures of the six team members. In the minority condition there was only one other team member with the same sex and four team members of the opposite sex, while in the majority condition there were three other team members with the same sex, and only two team members with the opposite sex. This sheet with pictures of the team remained on participants' desk during the entire experiment, to ensure its salience. As a manipulation check we asked each participant to indicate whether he or she belonged to a numerical majority or minority. In fact, all participants correctly identified being either a minority or majority member.

Manipulation projection. After the manipulation of the minority/majority position, projection was manipulated. Building on prior methodological procedures, our projection manipulation included an *order* variation of self-group salience (i.e, self first versus group first; e.g., Cadinu & Rothbart, 1996; Otten & Wentura 2001), and a *content* variation of the projected traits (i.e., personal versus stereotypical traits; Latrofa, Vaes, Cadinu, & Carnaghi, 2010; van Veelen et al., 2011; 2012a). Importantly, and different from prior research, the direction of the emergence of self-group overlap was explicitly primed. Participants were randomly assigned to a projection condition.

In the *self-anchoring* condition, in order to make the personal self salient, participants were first asked to write down five traits that would typically characterize them as an individual. Next, we asked them to write about how the five personal traits would be applicable to the team they were just introduced to. By letting participants think about how personal characteristics are applicable to the team, we aimed to create a link between the self and the group, based on personal attributes.

In the *self-stereotyping* condition, in order to make group prototypes salient, participants were first asked to write down five traits that would typically characterize their team. Subsequently, we asked them to write about how the five team traits would be applicable to them as an individual. By letting participants think about how group characteristics would be applicable to themselves, we aimed to create a link between the self and the group, based on prototypical group attributes.

In the *control* condition there was no mindset prime between the group size manipulation and administering the dependent variables.

Dependent variables. After the projection manipulation participants were told that in a few moments they would start brainstorming. However, we also stated

that beforehand, we were interested in their first impressions about the team. Actually, at this point participants filled out the questions concerning our dependent measures.

First, *social identification* with the diverse team was measured based on the membership subscale of collective self-esteem scale by Luhtanen and Crocker [1992; 4 items; e.g., 'I think that I am a valuable member of this team', 'I don't think I have much to offer to this team' (reverse coded); $\alpha = .58$[2]] on a 7-point Likert scale (1 = I completely disagree; 7 = I totally agree). We specifically focused on this conceptualization of identification as, according to a meta-analysis by Leach et al. (2008) it grasps a 'sense of belonging and psychological commitment to the ingroup' (p.147), which is exactly what we consider crucial in diverse groups. Overall, the level of identification was significantly above the midpoint of the scale (M = 5.30; SD =.75), $t(159) = 21.94$, $p < .001$, indicating that participants substantially identified with the online team.

Subsequently, we measured the expectations about *value in diversity* in the team, based on six items adapted from van Knippenberg et al. (2007) and Tropp and Bianchi (2006) on a 7-point Likert scale (1 = I completely disagree; 7 = I totally agree). We formulated the items such that they were focused on expectations about the team identity during the upcoming brainstorm task (e.g., 'I expect our team to be understanding and respectful if men and women have different ways of working together', 'I think the collaboration in this team would be better if it were to consist of only [men/women] (reversed item)"; $\alpha = .71$).

At the end of the questionnaire, we explained that the brainstorming task would actually not take place and that the other team members were fictional. We thanked and carefully debriefed participants.

Results

The projection manipulation. The implicit nature of our projection manipulation did not allow for an explicit manipulation check. However, we could take advantage of the traits participants wrote down to describe both the self and the team, in order to check whether our manipulation was successful. We evaluated these traits regarding their *content* and *valence*.

The *content* of projected traits should be different across conditions; self-stereotyping should be associated with projection of team traits on the self, whereas

self-anchoring should not. To test this, two independent raters rated all the projected traits on whether they explicitly referred to socially shared aspects of the team, such as being related to 'male', 'female', and 'students'[3]. We called these 'team traits'. We created a variable indicating whether 'team traits' were projected (yes/no). As expected, the number of participants projecting 'team traits' was significantly higher in the self-stereotyping (N_{yes} = 33; N_{no} = 21) compared to the self-anchoring condition (N_{yes} = 3; N_{no}:=51; χ^2=37.50, p <.001*)*.

Moreover, the *valence* of projected traits should be similar across projection conditions. To check this, the same raters also rated the valence of all traits as positive, negative or neutral[4]. The number of positive and negative traits projected by each participant was counted. Two analyses of variance (ANOVA's) with *projection* and *minority/majority position* as predictors revealed no significant main or interaction effects on both the number of positive and negative traits projected (all p's > .50).

Taken together, the analyses on projected traits indicate that our projection manipulation was successful: The content of projected traits was related to team characteristics in the self-stereotyping condition, while much less so in the self-anchoring condition. Moreover, trait valence was the same across conditions, rendering an interpretation of mindset-effects in terms of differentially primed valence implausible.

Social identification. We conducted an analysis of variance (ANOVA) with *projection* (self-anchoring versus self-stereotyping versus control) and *minority/majority position* as independent variables and social identification as dependent variable. This revealed a marginal main effect of projection F (2, 154) = 2.67, p =.07, η^2=.03, which was further qualified by the expected interaction effect, F(2, 154)= 4.47, p =.013, η^2=.06 (see Figure 5.1). To examine the differences in social identification between our 3-level projection variable among minority and majority group members, we conducted a simple main effects analysis by calculating dummy-coded contrasts based on LMATRIX in SPSS (Siero, Huisman, & Kiers, 2009). This simple main analysis revealed that for minority members social identification was significantly higher in the self-anchoring condition (M = 5.63; SD =.65) compared to both the self-stereotyping (M = 4.93; SD =.82), F(1,154)= 11.59, p = .001, η^2 =.07, and the control condition (M = 5.02; SD =. 57), F(1,154)= 4.07, p = .045, η^2 =.03. For majority members, no significant differences were found in the level of identification between the projection conditions (all p's > .15).

Value in diversity. An ANOVA on perceived value in diversity revealed a significant main effect of minority/majority position, $F(1,154)= 9.37$, $p =.003$, $\eta^2=.06$, indicating that majority members compared to minority members have more positive expectations about value in diversity in the team. This main effect was further qualified by the expected interaction effect, $F(2,154) = 3.94$, $p =.021$, $\eta^2=.05$ (see Figure 5.2). Simple main effects analysis revealed that for minority members perceived value in diversity was significantly higher in the self-anchoring condition ($M = 5.29$; $SD =.74$) compared to both the self-stereotyping ($M = 4.76$; $SD =.79$), $F(1,154)= 5.40$, $p = .021$, $\eta^2 =.03$, and the control condition ($M = 4.70$; $SD =.93$), $F(1,154)= 6.48$, $p = .012$, $\eta^2 =.04$. For majority members, no significant differences were found in the level of identification between the projection conditions (all $p's > .25$)[5].

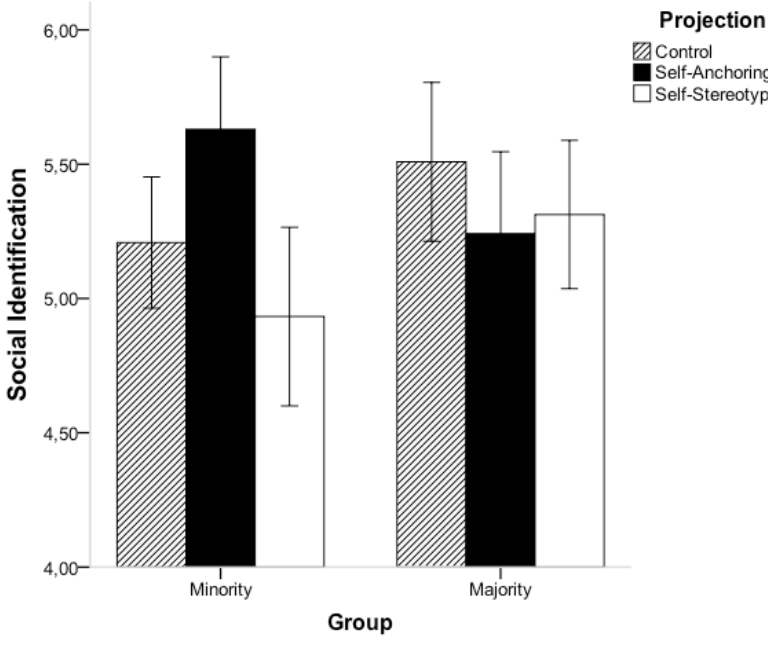


Figure 5.1
The effect of projection (control versus self-anchoring versus self-stereotyping) x group position (minority versus majority) on social identification. Error bars represent 95% confidence intervals.

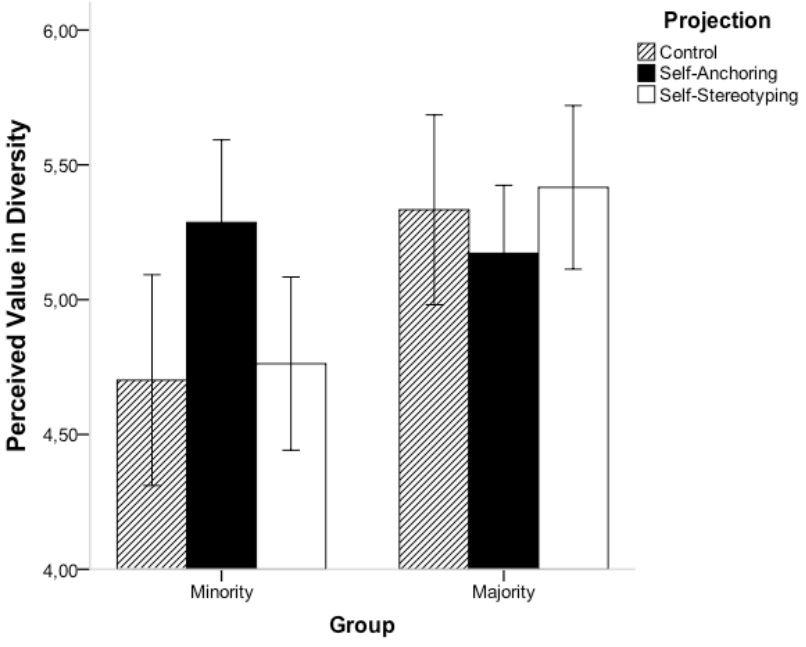


Figure 5.2
The effect of projection (control versus self-anchoring versus self-stereotyping) x group position (minority versus majority) on perceived value in diversity. Error bars represent 95% confidence intervals.

Discussion

In the present research we showed that the cognitive definition of the *self* in relation to a diverse group plays an important role in minority and majority members' identification with diverse groups. Specifically, for minority members *self-anchoring* led to higher levels of identification compared to *self-stereotyping*. Moreover, minority members' self-anchoring also resulted in more positive expectations about value in diversity. Thus, self-anchoring, as opposed to self-stereotyping, allowed minority members in diverse groups to belong, while being different. Importantly, the positive effect of self-anchoring for minority members did not go at the expense of majority members' identification. For them, both cognitive pathways towards self-group overlap provided equally successful approaches to identification. This is important considering that majority members increasingly feel excluded in groups where pro-diversity initiatives are implemented (Plaut, Garnett, Buffardi, & Sanchez-Burks, 2011).

Theoretical implications

Our findings on self-anchoring contribute to a recently growing literature demonstrating that not only a focus on similarity-based group conformity (Tajfel & Turner, 1979; Turner et al., 1987), but also a focus on the individual in the group facilitates group identification (see for reviews Hornsey & Jetten, 2004; Jetten & Postmes, 2006). The lion share of this literature focuses on strategies related to the *structural properties* of a group that render room for the individual. It demonstrates people's ability to identify with groups in which individuality is normative. Prominent examples are groups with individualist cultural norms (Hornsey, Jetten, McAuliffe, & Hogg, 2006; Jetten, Postmes, & McAuliffe, 2002), and inductively formed groups (Jans, Postmes, & van der Zee, 2011; Postmes, Spears, Lee & Novak, 2005)

Our findings on the impact of self-anchoring and self-stereotyping in diverse groups focus on *perceptual framing*, or the idea that self-perception can be tailored such that the self as a unique individual can become relevant for group identification (Hornsey & Jetten, 2004; 2005). Thus far, such perceptual strategies have received little attention in the literature. Therefore, we believe our findings form an innovative and valuable contribution to how cognitive shifts in perceptual framing of the self in relation to a

group can affect identification with diverse groups. In this context, we provide a cognitive account as to *how* (i.e., via self-anchoring) a mental relationship between self and group can best be formed in a diverse group, and for *whom* (i.e., minority members*)* such strategy is most important to achieve a sense of belonging while being different.

At first glance, it may seem as though our results on self-stereotyping contradict earlier results on the protective function of self-stereotyping for low status minority members' well-being (Latrofa, Vaes, Pastore, & Cadinu, 2009). Here, self-stereotyping benefits instead of hinders minority members. However, Latrofa and colleagues investigated self-stereotyping at the *subgroup* level, showing that strong assimilation to minority stereotypes may create a sense of safety and belonging within the own *subgroup*. Yet, when the goal is to create a sense of inclusion for minority members within a *superordinate* group, our results indicate that self-stereotyping hinders minority members. In such situation, stereotypes do no longer reflect the minority subgroup's stereotypes, but more likely the majority's stereotypes. Therefore it is important to disentangle cognitive definitions of the self in relation to the subgroup, or rather the superordinate group when investigating the effects of self-stereotyping in diverse groups.

Other implications and further research

In the present research, we argue that the effects we find on our projection prime are driven by a cognitive process, such that self-anchoring activates individuating self-knowledge, while self-stereotyping activates category-based group information as a source of self-group overlap (Gramzow, Gaertner, & Sedikides, 2001; Krueger, 2007). However, an evaluative process might also play a role, such that self-anchoring allows people to re-affirm the positive self in the group after being confronted with their minority position (cf. Derks, Van Laar, & Ellemers, 2009; Gramzow & Gaertner, 2005). Future research should provide more insight into the relevance of these accounts for the effect of self-anchoring and self-stereotyping primes on social identification.

We have employed a subtle manipulation of cognitive projection processes. Of course, we do not expect that this manipulation directly translates into optimal group functioning among minority members − how we function in groups is not only

determined by our thoughts, but also by our experiences. Nevertheless, repetitive exposure to a priming manipulation fostering self-anchoring may increase the likelihood that over time the individual self will be used as a standard to define the ingroup (Herr, 1986), thereby facilitating minority members' sense of belonging. For example, in newly formed diverse teams, where the most obvious social subcategories (e.g., gender, ethnicity) typically shape perceptions of category similarity within the team (Zellmer-Bruhn, et al., 2008), minority members may be prone to perceive a pressure to assimilate to group prototypes and, hence, identify less. Yet, organizational policies encouraging minority members to redefine their cognitive perceptions and think about how their *personal* self defines the team as a whole may elevate identification levels and expectancies about value in diversity.

It is important to note that our diversity manipulation based on gender refers specifically to *social category diversity* (i.e., differentiation based on readily detectable, demographic attributes such as gender, age and ethnicity) and not *informational diversity* (i.e., differentiation based on less visible attributes such as educational background; e.g., van Knippenberg et al., 2004). Moreover, aside from the horizontal aspect of diversity (i.e., division in social subcategories), there are also vertical aspects to consider, such as relative subgroup size, status, and power over resources (Harrison & Klein, 2007). In our numerical diversity manipulation, vertical aspects are only represented in the *asymmetrical* division in subgroup size, and not in status or power differences between sexes.

Following from this, our study results do not tap into potential status differences between men and women in our sample population (see also Chattopadhyay, George, & Sulman, 2008). Yet one could argue that such status differences may exist: On the one hand, men generally still have higher status in society then women, specifically in team settings (Chattopadhyay et al., 2008). This implies that experimental teams composed of a female minority may have felt more 'natural' to participants. On the other hand, in our student sample most participants study a social science. This implies that for female participants it may be more 'natural' to outnumber men in a team, then vice versa. Both cases can be made, and therefore it is important to note that in our study, the results we were solely attributable to our experimentally induced manipulation of the ratio of sexes in the team; potential a-priori differences between male and female participants did not impact on our results (see also Footnote 5).

This is not to say however, that our findings may not generalize to other forms of diversity. In our view, self-anchoring may not only facilitate minority

members' level of group identification when minority/majority subgroup salience is based on numbers, but also when it is based on status, power, or a combination of those. In essence, group diversity based on the salience and accessibility of a-symmetrical subgroup categories (Tajfel & Wilkes, 1963) likely signals majority members' ability, and minority members' inability to infer a group bond based on being a prototypical group member (i.e., self-stereotyping). The stronger a-symmetrical subcategories are, the stronger the applicability of similarity-based models to inclusion and exclusion (Lau & Murighan, 1998; Turner et al., 1987), but also the more likely it may be that self-anchoring may help overcome negative consequences for minority members' sense of belongingness. Further research should provide more evidence for the generalizability of our findings to other types of diversity.

As expected, majority members' perceived value in diversity was generally high (above midpoint of the scale) and unaffected by the projection manipulation in our study. This is in line with research stating that because majority members are mostly unaffected by potential problems associated with diversity, they tend to strongly endorse value in diversity (e.g., Tropp & Bianchi, 2006). An interesting question is whether this finding applies to majority members in any demographically diverse group. Possibly, in diverse groups in which majority members openly discard diversity and stigmatize minority members, there is something to gain from self-anchoring, as it may shift majority members' focus from prototypical group characteristics to the group members' individual merits. Further research should provide more insight into this matter.

Conclusion

To conclude, how people cognitively define the self in a diverse group significantly impacts on their identification and sense of inclusion. Specifically, a simple mindset prime, focusing on the personal self instead of the social self, already enhances minority members' identification and their perception that each individual forms a valuable part of a diverse group.

Notes

1. The terms self-anchoring and social projection are generally used inter-changeably in the literature, referring to the self as a heuristic to make group judgments (e.g., Krueger, 1998). For ease of readability we only use the term self-anchoring.

2. The relatively low Cronbach's alpha for social identification was likely caused by the negatively phrased items within each measure (Schriesheim, Eisenbach, & Hill, 1991). Importantly, the pattern of results was similar when analyzing all items separately.

3. The inter-rater reliability on *'team traits'* indicated substantial agreement (Kappa = .75, p <.001; Landis & Koch, 1977). In case of disagreement, we took a conservative approach and did not indicate a trait as being a 'group trait'.
4. On *valence* inter-rater reliability indicated almost perfect agreement (Kappa = .85, p <.001; Landis & Koch, 1977). In case of disagreement, traits were indicated as neutral.

5. We also conducted our analyses including gender of the participant as a covariate in our design. The covariate did not show a main effect on both our dependent variables (both p's > .50) and importantly, inclusion of this covariate yielded a similar pattern of results for both social identification and perceived value in diversity.

Chapter 6

Enhancing majority members' pro-diversity beliefs in small teams: The facilitating effect of self-anchoring[5]

Abstract

Majority members often react negatively to efforts to stimulate diversity. An important reason for this is that in diverse groups, majority members' own group bond is typically based on perceived prototypicality, which serves to disregard those who are different. In the present research we investigate how majority members' pro-diversity beliefs may be enhanced, by experimentally manipulating how the self is cognitively defined in relation to a diverse group. Specifically, we hypothesize that majority members' focus on the personal self (i.e., self-anchoring) rather than the social self (i.e., self-stereotyping) when creating a group bond may facilitate their pro-diversity beliefs and positive attitudes towards minority members. In two experiments we manipulated self-anchoring and self-stereotyping via mindset priming among ethnic majority members in diverse teams. As expected, results showed that relative to self-stereotyping, majority members' self-anchoring enhanced pro-diversity beliefs and positive attitudes towards minority members

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[5] This chapter is based on Van Veelen, R., Otten,. S., & Hansen (*2013b*). Enhancing majority members' pro-diversity beliefs in small teams: The facilitating effect of self-anchoring. *Experimental Psychology.* (Pagination not specified). Doi: 10.1027/1618-3169/a000220

In today's societies diversity is increasing. Advances in communication technology and growing mobility bring people from different groups and origins together. Currently, 9.4% of all people in the European Union are foreign-born residents (Eurostat, 2011). This development is accompanied by programs and campaigns set out to elicit pro-diversity attitudes. Not everyone, however, shares the belief that diversity is a valuable asset to a group's identity. Specifically, majority members are often skeptical about the idea that diversity is something valuable (Thomas & Plaut, 2008; Verkuyten, 2005; Wolsko, Park, & Judd, 2006). In two experiments, the present paper addresses this topic and shows how majority members' pro-diversity beliefs can be enhanced by manipulating projection from self to group and vice versa.

Prior research has attributed majority members' negative sentiments towards diversity to factors such as prejudice, threat (e.g., Sanchez-Burks, Nisbett, & Ybarra, 2000), and perceived losses in social dominance and status (e.g., Sidanius & Pratto, 1999). Importantly however, rather than focusing on these affective intergroup aspects, we argue that majority members' cognitive representation of the *self* within a diverse group also forms a crucial factor explaining their attitude towards diversity. Specifically, in diverse groups majority members typically perceive themselves as prototypical members; and it is this perceived prototypicality that forms the basis for majority members' own group belongingness (Wenzel, Mummendey, & Waldzus, 2007). Therefore, attaching value to diversity may endanger majority members' own belongingness, because being similar to group prototypes is no longer an important requirement to be part of a group. Hence, to secure their own group membership, majority members are likely to refrain from perceiving diversity as valuable and accepting those who are different (i.e., minority members) within the diverse group (Plaut, Garnett, Buffardi, & Sanchez-Burks, 2011).

The aim of the current research is to investigate how majority members' own belongingness to diverse groups may go hand in hand with attaching positive value to diversity. In other words, how can majority members shape a bond between the self and the group that is not detrimental for the inclusion of those who are different, namely the minority members? In answering this question we focus on the cognitive processes that determine how the self is defined within a diverse group. In general, people's psychological bond with a group is based on the strength of the cognitive relationship between self and group (Tropp & Wright, 2001). Such bond can either be inferred from the *personal* self or the *social* self (van Veelen, Otten, & Hansen, 2011).

We argue that using the personal self as an anchor to create a relationship with a diverse group (i.e., *self-anchoring*[1]; Cadinu & Rothbart, 1996), rather than using the social self (i.e., *self-stereotyping*, Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) will facilitate majority members' pro-diversity beliefs and their positive attitudes towards minority members.

Cognitive routes to self-group overlap

Following from social identity theory (SIT; Tajfel & Turner, 1979) and self-categorization theory (SCT; Turner et al., 1987), self-stereotyping has traditionally been seen as the crucial process explaining how a cognitive self-group bond emerges. SCT posits that people have a social and a personal self existing at opposite ends of the same continuum. With self-stereotyping the social self becomes salient and the personal self shifts to the background, or depersonalizes. Consequently, group members will "…view themselves as interchangeable exemplars of the social category, rather than unique personalities defined by their individual differences from others" (Turner et al., 1987, p. 50). Thus, following self-stereotyping principles self-group overlap refers to the assimilation of the self to socially shared, prototypical group characteristics.

In contrast, self-anchoring implies the projection of personal characteristics onto the group (Cadinu & Rothbart, 1996). It is the exact opposite process from self-stereotyping, because people use characteristics describing their individual self (i.e., "I am a creative person") to infer the representation of an ingroup identity (i.e., "my group is a creative group"). Thus, based on self-anchoring principles, the individual plays a crucial role in shaping a cognitive group bond (e.g., Cadinu & Rothbart, 1996; Krueger, 2007; Otten & Wentura, 2001; Otten, 2004).

Recent research has shown that both self-anchoring and self-stereotyping form distinct cognitive projection processes to create a group bond (van Veelen et al., 2011). Moreover, both also impact on perceptions about the group's identity representation (Van Veelen, Otten, & Hansen, 2012a). Therefore, in the current research we compare self-anchoring and self-stereotyping in the context of diverse groups, and investigate how both may affect majority members' pro-diversity beliefs and attitudes towards minority group members. Importantly, the projection processes we investigate always pertain to the relationship between the self and the superordinate group (which is, in the context of our research, the diverse group as a

whole, including both minority and majority subgroup), as our aim is to investigate how majority members' pro-diversity beliefs within this inclusive framework may be enhanced (see also Bianchi, Machunsky, Steffens, & Mummendey, 2009).

Projection processes and pro-diversity beliefs

Self-stereotyping implies assimilation of the self to prototypical group norms. For majority members in diverse groups, self-stereotyping can typically be assumed to facilitate a cognitive group bond, because there is a fit between the prototypes of the majority subgroup and the diverse group identity as a whole (Waldzus, Mummendey, Wenzel, & Boettcher, 2004). However, consequences for pro-diversity beliefs and attitudes towards minority members are likely to be negative. If majority members' group membership is based on a cognitive representation of the self as being similar to group prototypes, then those who deviate from these prototypes (i.e., minority members) likely form a threat to their sense of inclusion and social unity. This may explain why minority members often become victims of intolerance and discrimination (Wenzel, Mummendey, Weber, & Waldzus, 2003; Verkuyten, 2011). Thus, if self-stereotyping instigates perceived similarity and prototypicality as the cornerstone of majority members' group membership, this may likely hinder the perception that non-prototypical, minority members can also be valuable for the group's identity representation.

In contrast, with self-anchoring group membership does not depend on assimilation to group prototypes (e.g., Robbins & Krueger, 2005; van Veelen et al., 2012a). Instead, personal characteristics provide an anchor to infer a direct link between the self and the superordinate group. Indeed, research has shown that in superordinate groups, people tend to project personal characteristics to the higher order social category almost as strongly as to the more local subcategory (Krueger & Clement, 1996; Krueger & Zeiger, 1993; Riketta & Sacremento, 2008). This implies that in diverse groups self-anchoring may allow majority members to cognitively link the self to the group, irrespective of being prototypical or not.

What consequence does this have for majority members' pro-diversity beliefs? A group's identity representation likely becomes quite heterogeneous when it is based on individuals' conceptions on what the group is like (see also Otten, 2005). When majority members engage in self-anchoring they may perceive themselves as an individual member who is different from others, just like minority members may be

different from the majority (Krueger & Didonato, 2008). Taken together, we assume that with self-anchoring majority members' mental representation of the personal self in a diverse group may go hand-in-hand with a belief that diversity is valuable.

To conclude, while self-stereotyping may lead majority members to perceive that similarity between group members is the cornerstone of group membership, self-anchoring may lead to the perception that individual differences and group membership form a nice blend. This idea links to social comparison research showing that using the group as a standard to evaluate the self (as with self-stereotyping) leads to a similarity focus, while using the self as a standard to evaluate the group (as with self-anchoring) leads to a difference focus (e.g., Mussweiler, 2001). Similarly, organizational diversity research showed that a focus on similarity-based self-categorization hinders pro-diversity beliefs (van Knippenberg, de Dreu, & Homan, 2004; van Knippenberg, Haslam, & Platow, 2007) while a focus on group members' individual characteristics facilitates pro-diversity beliefs (Homan, Greer, Jehn, & Koning, 2010). Hence, we hypothesize that for majority members in diverse groups self-anchoring leads to stronger pro-diversity beliefs than self-stereotyping (*Hypothesis 1*).

Attitudes towards minority members. Aside from majority members' pro-diversity beliefs, we are also interested in specific attitudes towards minority members within diverse groups. Importantly, attitudes towards minority members draw specific attention to majority members' concrete perceptions about those who are different within diverse groups. Therefore, in line with our expectations regarding pro-diversity beliefs, we hypothesize that among majority members self-anchoring will also lead to more positive attitudes towards minority members in a diverse group than self-stereotyping (*Hypothesis 2*).

The present research

The present research aims to demonstrate that relative to self-stereotyping, self-anchoring may facilitate majority members' pro-diversity beliefs and positive attitudes towards minority members in diverse groups. We conducted two experiments to test our predictions. Study 6.1 used a scenario paradigm and Study 6.2 tested the assumptions in a real group setting. In both experiments group diversity was operationalized based on differences in ethnicity. Specifically, members of an

ethnic majority participated in a study on diverse teams. Furthermore, self-anchoring and self-stereotyping were manipulated via mindset priming. In prior research this mindset priming has proven to be a valid methodology to instigate self-anchoring or self-stereotyping processes in groups (van Veelen, Otten, & Hansen, 2012b). It is important to note that we assume that majority members' enhanced pro-diversity beliefs in response to self-anchoring (relative to self-stereotyping) does not negatively affect majority members' group belongingness (Plaut et al., 2011). Therefore, identification was included in our analyses as a covariate.

Study 6.1

Method

Participants and design. In a 1-factorial design we manipulated *projection* (self-anchoring and self-stereotyping) among majority members in an ethnically diverse team and investigated its impact on pro-diversity beliefs and attitudes towards minority members. Forty-four native Dutch students participated in the study (M_{age} = 21.84; *SD* = 2.58; 22 women).

Procedure. Participants filled out a paper-and-pencil questionnaire about a fictitious organization called "Pure Nature" producing biological candy. They were asked to imagine being part of a marketing and development team of six employees. Participants were shown 5 pictures of the fictitious team members. A sixth empty picture frame represented the participant him/herself. The composition of the team was always such that the participant was part of a Dutch majority in a team with two ethnic minority members (i.e., Turkish-Dutch). The pictures were taken from the Amsterdam Dynamic Facial Expression Set (ADFES; Van der Schalk, Hawk, Fischer, & Doosje, 2011) and all neutral in emotional expression. For female participants we only used female faces and for male participants only male faces. Participants were asked to indicate whether there were more native or non-native Dutch members in their team (manipulation check). Everyone indicated this correctly.

Subsequently, *projection* was manipulated via mindset priming. Van Veelen et al. (2012b) showed that this methodological procedure can instigate either self-

anchoring or self-stereotyping when creating a self-group bond. Participants were randomly assigned to one of two projection conditions. In the *self-anchoring* condition, in order to make the personal self salient participants were first asked to write down traits that would typically characterize them as an individual. Next, we asked them to write about the applicability of the personal traits to the team they were just introduced to. By letting participants think about how personal characteristics are applicable to the team, we aimed to create a link between the self and the group based on personal attributes.

In the *self-stereotyping* condition, in order to make group prototypes salient participants were first asked to write down traits that would typically characterize the team. Subsequently, we asked them to write about the applicability of the team traits to themselves. By letting participants think about how group characteristics are applicable to themselves, we aimed to create a link between the self and the group based on group prototypes.

Dependent measures. Subsequently, we measured majority members' *team identification* (8 items adapted from Leach et al., 2008) on a 7-point Likert scale (1 = not at all; 7 = completely; e.g., 'To what extent would you feel part of this team?'; a = .95). *Attitudes* towards the Turkish-Dutch minority in the team were measured based on the applicability of four positive traits (e.g., 'nice, 'positive'; 1 =not at all; 7 =completely; α = .83). Next, pro-diversity beliefs were based on a multiculturalism measure (5 items from Berry & Kalin, 1995; 'People should value that the Dutch society consists of groups with different cultural backgrounds', 'Ethnic minorities should be supported to preserve their cultural heritage in the Netherlands', 'A society that has a variety of cultural groups is more able to tackle new problems as they occur', 'Immigrants' parents must encourage their children to retain the culture and traditions of their homeland', 'The Dutch should do more to learn about the customs and heritage of different cultural groups in this country'; α = .82). Endorsement of multiculturalism implies recognition and appreciation of group differences and is therefore inextricably linked to the concept of pro-diversity beliefs (see Kauff & Wagner, 2012).

Finally, participants were debriefed and received candy in return for participating.

Results and discussion

Manipulation check. The implicit nature of our projection manipulation did not allow for an explicit manipulation check. However, two independent raters evaluated the projected traits on their *content* and *valence*[2]. The *content* of projected traits should be different across projection conditions; self-stereotyping should be associated with the projection of traits referring to the *team's characteristics*, while self-anchoring should not. To test this, all the projected traits were rated on whether or not they explicitly referred to socially shared aspects of the team, such as being 'Dutch' or 'White'. We called these traits 'team traits'. We created a variable indicating whether 'team traits' were projected (yes/no). As expected, the number of participants projecting 'team traits' was significantly higher in the self-stereotyping (N_{yes}= 7; N_{no}= 14) compared to the self-anchoring condition (N_{yes}= 0; N_{no}= 23; χ^2=9.12, p=.003*)*.

Moreover, the *valence* of projected traits should be similar across conditions, rendering an interpretation of mindset-effects in terms of differentially primed valence implausible. Results on the number of positive and negative projected traits revealed no significant differences between projection conditions on neither positive (self-anchoring: $M_{positive}$= 1.74, $SD_{positive}$= 1.13; self-stereotyping: $M_{positive}$= 1.29, $SD_{positive}$= 1.49) nor negative projected traits (self-anchoring: $M_{negative}$= .04, $SD_{negative}$= 2.09; self-stereotyping: $M_{negative}$= 0.00, $SD_{negative}$= 0.00), all p's > .21. Together, these analyses indicate that our projection manipulation was successful.

Main analyses. A MANOVA with *projection* (self-anchoring versus self-stereotyping) as the independent variable, multiculturalism and attitudes towards the minority as dependent variables, and team identification as a covariate[3] revealed a significant multivariate effect, F (2, 40) = .4.67, p = *.015*; *Wilk's* Λ = .81, η^2 =.20. Confirming Hypothesis 1, *multiculturalism* was stronger in the self-anchoring (M = ; SD = .91) than the self-stereotyping (M = 4.09; SD = 1.19) condition, F (1, 41) = 4.96, p = .032, η^2= .11. Furthermore, confirming Hypothesis 2, *attitudes towards the ethnic minority* were more positive in the self-anchoring (M = 4.59; SD = .92) compared to the self-stereotyping condition (M = 3.71; SD = 1.09; F (1, 41) = 7.88, p = .008, η^2= .16; see Figure 6.1). Importantly, team identification did not differ between the self-anchoring (M = 4.90, SD = 1.31) and self-stereotyping (M = 5.11, SD = .70) condition, F (1, 42) = .46, p = .501, η^2= .01). Also as a covariate, team identification had no effect on the dependent variables (F (2, 40) = .006, p = .994; *Wilk's* Λ = 1.00, η^2 < .001), nor did it affect

results from the projection manipulation on the dependent variables. This signals that enhanced pro-diversity beliefs in response to self-anchoring do not decrease majority members' own sense of belongingness[4].

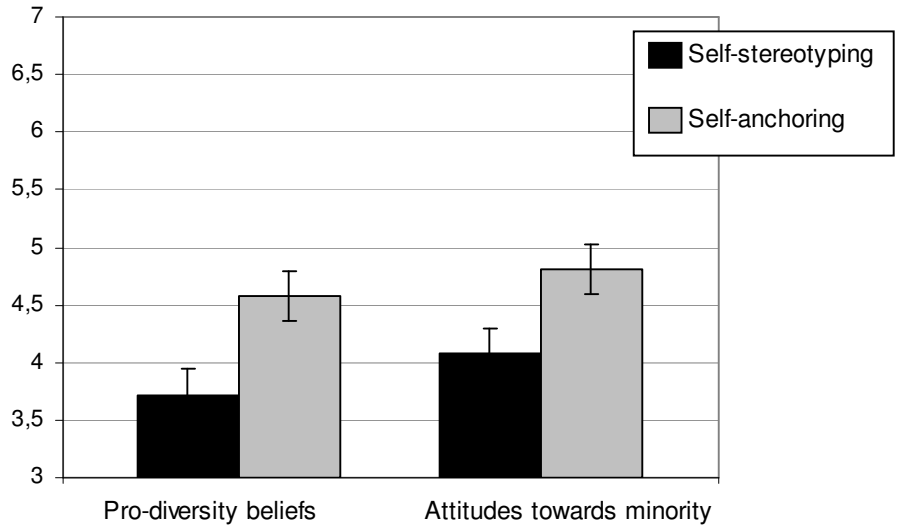

Figure 6.1:
The effect of projection (self-anchoring versus self-stereotyping) on majority members' pro-diversity beliefs (multiculturalism) and attitudes towards the minority (Study 6.1). Error bars represent standard errors.

Study 6.2

In Study 6.2 we aimed to replicate our findings in a more natural setting, in which participants were part of an online brainstorming team in the lab. Because participants were expecting to actually work together in an online team, we measured expected value in diversity for group functioning (van Knippenberg et al., 2007). In addition, we further refined our measure of attitudes towards the ethnic minority by distinguishing between attitudes in the social, moral and competence domain (Leach, Ellemers, & Barreto, 2007).

Method

Participants and design. In a 1-factorial design we manipulated the type of projection process (self-anchoring and self-stereotyping) among 58 native Dutch students in ethnically diverse teams and investigated pro-diversity beliefs and attitudes towards the minority team members. Five participants were excluded from analysis; one exceeded the average age of the other team members substantially[5] and four did not believe the cover story. In total, 53 participants remained in the dataset (M_{age} = 19.25; *SD* = 1.78; 44 women).

Procedure. On arrival in the laboratory, participants were placed in separate cubicles and the experimenter told them they would participate in a study on 'first impressions and team effectiveness in virtual teams'. They were told that they would be connected via the computer to five other team members to engage in a brainstorming task. A picture was taken of each participant, ostensibly to form an impression of the team members. The experimenter left the cubicle while participants were ostensibly connected to the team network. The experimenter returned and gave a sheet with six printed pictures (Van der Schalk et al., 2011): one of the participants and five of the alleged other team members. There were always four native Dutch team members (just as the participant) and two Moroccan-Dutch. This time, we balanced the number of men and women (see Appendix). To make the native Dutch and Moroccan-Dutch subgroups more salient, team members' name and ethnic background was also provided. The sheet with pictures remained on participants' desk throughout the experiment. Again, all participants correctly indicated that there were more native than Moroccan-Dutch team members (manipulation check).
Subsequently, participants were randomly assigned to a *projection* condition as in Study 6.1.

Dependent variables. After the projection manipulation we told participants that in a few moments they would start brainstorming, but that before we were interested in their first impressions about the team. Actually, at this point participants answered questions about our dependent measures. *Team identification* was measured with 7 items (Jansen, Otten, van der Zee, Vos, & Smith, 2012 from 1 (completely disagree) to 7 (completely agree; i.e., 'I feel a bond with this team'; α = .89). *Attitudes towards minority* were based on the applicability of six traits to the Moroccan-Dutch team members on

a scale from 1 (not at all applicable) to 9 (completely applicable). Following Leach et al. (2007) we measured attitudes in three domains: sociability [friendly, nice; r(53) = .81, p <.001], morality [trustworthy, honest; r (53) = .68, p <.001], and competence [intelligent, disciplined; r (53) = .66, p <.001]. Finally, *pro-diversity beliefs* focused on expectations about value in diversity for group functioning during the brainstorm task. Items were adapted from van Knippenberg et al. (2007) and Wolsko et al. (2006; 5 items; e.g., 'I think it will be positive for the collaboration that the team consists of both native and Moroccan Dutch'; α = .86; 1= I completely disagree; 7= I completely agree). Finally, participants were told that the actual brainstorm task would not take place. They were carefully debriefed and received study credits in return.

Results and discussion

Manipulation check. As in Study 6.1, two raters judged the content and valence of projected traits[6]. Again, the number of participants projecting 'team traits' was significantly higher in the self-stereotyping (N_{yes}= 13; N_{no}= 12) compared to the self-anchoring condition (N_{yes}= 0; N_{no}=28; χ^2=19.29, p <.001*)*, and the valence of projected traits did not differ between conditions, neither for positive (self-anchoring: $M_{positive}$= 2.21, $SD_{positive}$= 1.20; self-stereotyping: $M_{positive}$= 2.64, $SD_{positive}$= 1.41) nor for negative traits (self-anchoring: $M_{negative}$= .18, $SD_{negative}$= .77; self-stereotyping: $M_{negative}$= 0.00, $SD_{negative}$= 0.00), all p's > .23.

Main analyses. A MANOVA revealed a similar pattern of results as in Study 6.1. The multivariate effect of *projection* on the dependent variables was significant, F (2, 47) = .4.05, p = *.007*; *Wilk's* Λ = .74, η^2 = .26. Importantly, perceived *value in diversity* was significantly higher among majority members in the self-anchoring (M = 5.75; SD = 1.01) compared to the self-stereotyping condition (M = 5.18; SD = 1.08), F (1,50) = 4.22, p =.05, η^2=.08. Moreover, majority members considered the Moroccan minority members to be more *moral* in the self-anchoring (M = 6.77; SD = .81) compared to the self-stereotyping (M = 6.22; SD = 1.18) condition, F (1,50) = .4.79, p = .03, η^2=.09, and also more *competent* in the self-anchoring (M = 7.21; SD =.72) compared to the self-stereotyping condition (M = 6.44; SD = 1.23), F (1,50) = 9.14, p <.01, η^2=.16. Thus, self-anchoring positively affected attitudes towards the minority subgroup. Only *sociability* attitudes towards minority members did not differ between the self-

anchoring (M = 6.83; SD = 1.00) and self-stereotyping condition (M = 6.74, SD = 1.19), F (1,50) = .33, p = .57, η^2=.007 (see Figure 6.2)[7].

In addition, as in Study 6.1, team identification did not differ between the self-anchoring (M = 4.20, SD = .80) and the self-stereotyping (M = 4.38, SD = .94) condition, F (1, 51) = .59, p = .45, η^2= .01. Also as a covariate, team identification had no effect on the dependent variables (F (4, 47) = .1.41, p = .24 .9; *Wilk's* Λ = .89, η^2 =.11), nor did it affect results from the projection manipulation on the dependent variables.

To conclude, in Study 6.2 we replicated the effects of Study 6.1. Moreover, self-anchoring enhanced majority members' positive attitude towards minority members on two of the three attitude domains. At present, we can only speculate why we did not find effects on sociability. Perhaps, sociability is less relevant for attitude-formation in an online work team, where the success of a brainstorm session may rely mostly on perceived competence and trustworthiness among team members.

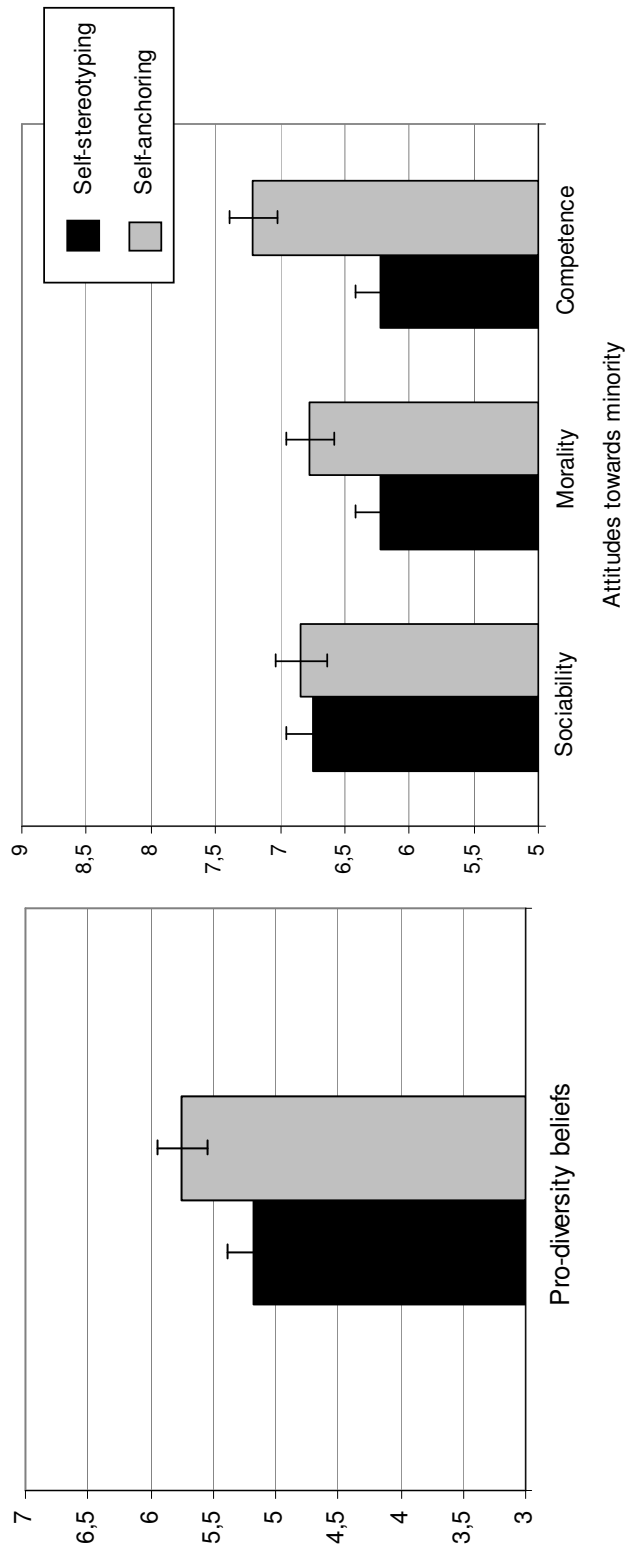

Figure 6.2:
The effect of projection (self-anchoring versus self-stereotyping) on majority members' pro-diversity beliefs (perceived value in diversity; left panel) and attitudes (sociability, morality, and competence; right panel) towards the minority (Study 6.2). Error bars represent standard errors.

Note: Pro-diversity beliefs were measured on a scale from 1 to 7 (left panel), while attitudes towards the minority were measured on a scale from 1 to 9 (right panel).

General discussion

Over the past decades group diversity has become an inextricable part of our lives. While group diversity itself has rapidly increased, pro-diversity beliefs among majority members seem to decrease (e.g., Joppke, 2004). Hence, there seems to be a barrier for majority members to perceive diversity as valuable to a group's identity. An important reason for this may lie in majority members' tendency to base their own group membership on being prototypical rather than being unique and different (e.g., Plaut et al., 2011). In the current research, we demonstrated across two experiments that majority members' self-anchoring (compared to self-stereotyping) facilitates pro-diversity beliefs and positive attitudes towards minority members in diverse groups. Our findings also show that majority members' enhanced pro-diversity beliefs in response to self-anchoring are not related to their level of identification with the diverse, superordinate group.

Theoretical and practical implications

Our cognitive approach to majority members' perceptions about the self and diversity resonates to recent research taking an evolutionary approach to diversity issues. Specifically, it has been argued that majority members' natural tendency to resist diversity is grounded in human's natural evolvement to think heuristically, in terms of simple 'us' and 'them' social categories (Crisp & Meleady, 2012). Indeed, majority members' negative attitudes towards minority members are most pronounced when their own prototypicality is derived from a simple, similarity-based group representation (Machunsky, Meiser, & Mummendey, 2009). Yet, as our findings underline, humans do have the cognitive capacity to bypass such heuristics and perceive groups to be more complex, inclusive social entities (Crisp & Meleady, 2012). Potentially, the shift from the social (i.e., self-stereotyping) to the personal self (i.e., self-anchoring) to create a bond with a superordinate, diverse group may form an important first step to facilitate majority members' adaptation to more 'pro-diversity-based' social cognitions.

Our research fits with prior work showing that a focus on the individual self in the group can facilitate the formation of group bonds (Hornsey, Jetten, McAuliffe,

& Hogg, 2006; Hutchison, Jetten, & Gutierez, 2011; Jans, Postmes, & van der Zee, 2011; Jetten, Postmes, & McAuliffe, 2002). Building on this, our findings indicate that a bond between the self and the group based on the individual self (i.e., self-anchoring) leads to the acknowledgement of *differences* between individual group members, while self-stereotyping, results in a focus on *similarity* between group members. This suggests that focussing on the individual self in the group might be beneficial when striving to foster majority members' pro-diversity beliefs and attitudes towards those who are different (i.e., minority members).

Our findings nicely extend work by Plaut and colleagues (2011), who found that only if majority members perceive themselves to be included in the definition of the diverse group this should lead to the acceptance of pro-diversity efforts. Adding to this, our results suggest a further refinement of *how* majority members should include the self in a diverse group identity. In this respect, self-stereotyping seems to make the representation of the self and those who are different mutually exclusive, while self-anchoring may be a way for majority members to represent the self within a diverse group's definition, while at the same time leaving room for other (different) group members to be included. Thus, with self-anchoring the inclusion of the self and those who are different, complement rather than conflict with each other.

In a recent paper, we also investigated the impact of self-anchoring and self-stereotyping in diverse groups, thereby specifically focusing on the beneficial effect of self-anchoring for *minority members'* level of *identification* with diverse groups (van Veelen et al., 2012b). The current research complements this work on projection processes in diverse groups, by focusing on *majority members' pro-diversity beliefs* and *attitudes toward minorities* in diverse groups. Here, we also demonstrate the beneficial effect that self-anchoring may have relative to self-stereotyping.

Limitations and further research

A limitation in our experiments is that we did not include a control condition in our design to locate majority members' base rate level of pro-diversity beliefs. Importantly however, such control condition was already included in the aforementioned study by van Veelen et al. (2012b). In that study, a comparison between the two projection conditions and the control condition revealed that the self-stereotyping and the control condition did not differ from each other, but only from the self-anchoring condition. This suggests that self-stereotyping forms the

default process to create self-group overlap. This is in line with research showing that in diverse groups with highly cognitively accessible subcategories (i.e., gender, ethnicity) people automatically differentiate those who are similar from those who are different from them (Stangor, Lynch, Duan, & Glass, 1992). Based on this, we feel confident that in the present research self-anchoring *facilitates* majority members' pro-diversity beliefs, rather than self-stereotyping *hindering* it.

We should note that our current findings only resonate to small, diverse teams constructed either based on a scenario (Study 6.1), or set up on the computer in the lab (Study 6.2). Also, in this research we specifically focused on ethnic diversity. Importantly however, group diversity, and pro-diversity beliefs can also be based on many other social categorization dimensions (e.g., age, gender, class). Therefore, in future research it would be highly valuable to investigate the generalizability of our findings to other group settings (i.e., larger social categories) and in relation to other types of diversity.

Furthermore, prior research has shown that pro-diversity beliefs can facilitate intergroup contact (Tropp & Bianchi, 2006), group commitment (van Knippenberg et al., 2007), and group performance (van Knippenberg et al., 2004) in diverse groups. In this respect, an interesting question for future research is whether our mindset prime to instigate self-anchoring, and its beneficial effects on pro-diversity beliefs, may also translate to actual group functioning in interactive, diverse groups. Possibly, a self-anchoring prime may form a promising starting point to facilitate a pro-diversity group climate in culturally diverse societies, organizations, schools and work teams (see also Luijters, van der Zee, & Otten, 2009). Indeed, repetitive priming of a self-standard has been shown to result in chronic accessibility of this standard to evaluate a target (Herr, 1986; Higgins, King, & Marvin, 1982).

To conclude, the present research suggests that the road towards pro-diversity attitudes may start within the individual self. Through self-anchoring majority members may shape a cognitive self-group bond that allows for the endorsement of pro-diversity beliefs.

Notes

1. The terms self-anchoring and social projection are often used inter-changeably in the literature, thereby referring to the process of using the self as a heuristic to make group judgments (e.g., Robbins & Krueger, 2005). We only used the term self-anchoring in the present paper, yet conceptually we consider the two terms as equivalents.

2. In Study 6. 1, inter-rater reliability on *'team traits'* indicated almost perfect agreement (Kappa = .83, p <.001). On *valence* inter-rater reliability indicated substantial agreement (Kappa = .74, p <.001; Landis & Koch, 1977). In case of disagreement, we took a conservative stance and did not indicate a trait as being a 'team trait', and valence of traits was indicated as neutral.

3. In Study 6. 1, the assumption of homogeneity of regression slopes (required for covariance analyses) was violated, suggesting that we should be tentative in our conclusions about the covariate. Yet, considering that our group sizes are quite large and equal across conditions, we can assume that our analysis is fairly robust against this assumption violation (Hamilton, 1977). In Study 6.2, assumptions for covariance analyses were all met.

4. In both experiments, controlling for gender did not affect our results. Thus we excluded this factor from further analysis.

5. This exclusion was based on the notion that a big age difference introduces yet another form of diversity. Note however that results remain stable when including this participant in analyses.

6. In Study 6. 2, inter-rater reliability on both 'team *traits'* (Kappa = .93, p <.001) and *valence* (Kappa = .83, p <.001) indicated almost perfect agreement (Landis & Koch, 1977).

7. We also tested mediation effects in both studies. However, we found equally strong support for *pro-diversity beliefs* being the mediator between *projection* and *attitudes* towards the minority and the reversed causal model.

Appendix

Example team composition based on ADFES pictures (van der Schalk et al., 2011).

Note: From left to right, up down, the participant information was Jan-Willem (Dutch), Sophie (Dutch) Zohra (Morrocan) [female participant] (Dutch), Koen (Dutch), Karim (Moroccan).

Chapter 7

A Cognitive Dual-pathway Model of Social Identification: A Conceptual and Methodological Integration of Self-stereotyping and Self-anchoring[6]

Abstract

Social identification denotes individuals' psychological bond with their ingroup. It is an indispensable construct in almost all research on intra- and intergroup dynamics. Yet remarkably little is known about how people identify with groups. In this review, a cognitive dual-pathway model to social identification is presented, postulating that there are two social inference processes to self-group overlap that can simultaneously yet distinctly explain social identification: Self-stereotyping and self-anchoring. The authors draw from a methodological review of popular methods to assess self-anchoring and self-stereotyping and define four measurement criteria that allow for the unequivocal and simultaneous measurement of the two processes within one research paradigm. Based on these methodological criteria, the integrative potential of self-stereotyping and self-anchoring in relation to social identification is empirically demonstrated and applied to different group contexts. Together, this review underlines the dynamic interplay of the social and the personal self as cognitive pathways to social identification.

[6] This chapter is based on: van Veelen, Otten, Cadinu, & Hansen (submitted for publication). *A cognitive dual-pathway model of social identification: A conceptual and methodological integration of self-stereotyping and self-anchoring.*

Humans are social beings. Or as the English poet John Donne wrote in 1624: "No man is an island". It is important to belong to groups to fulfill the basic needs for safety, survival and reproduction (Baumeister & Leary, 1995). Moreover, identification with groups shapes social perceptions, feelings and behaviors. Those who identify highly with their ingroup think of themselves in terms of their group membership (e.g., Spears, Doosje & Ellemers, 1997), feel close to other ingroup members (e.g., Doosje, Ellemers, & Spears, 1995), and are committed and concerned about the well-being of their ingroup (e.g., Smith & Tyler, 1997). As such, people's social identification[1] is psychologically relevant and socially consequential (see for a review Ellemers, Spears, & Doosje, 1999). Thus, it has become an indispensable construct in almost all research on intra- and intergroup dynamics (see for overviews Haslam, van Knippenberg, Platow, & Ellemers, 2003; Jetten, Haslam, & Haslam, 2012).

Considering the large body of research on *why* we identify with ingroups, and its consequences for social-psychological functioning, it is quite remarkable that very little is known about the *processes* underlying social identification. *How* do people identify with ingroups? This review article provides an answer to this question by unraveling the *cognitive paths* through which people may identify with ingroups. Based on a theoretical and methodological review we propose that there are two cognitive routes to create a mental bond between the self and the ingroup and that both can complement each other in explaining how people identify with groups. We integrate both routes in a *Cognitive Dual-pathway Model of Social Identification.* We will also provide empirical support for our model and demonstrate that its application to group research offers a new, dynamic and fine-grained understanding of how individuals in different ingroups may identify via different cognitive pathways.

Before we focus on *how* people identify, we need to know *what* social identification is. The answer to this question is complicated, specifically considering that in the past years social identity theorists have largely conceptualized social identification as consisting of multiple sub-components, resonating to different cognitive, evaluative and emotional aspects of identification (Ashmore, Deaux, & McLaughlin-Volpe, 2004; Cameron, 2004; Ellemers, Kortekaas, & Ouwerkerk, 1999; Jackson, 2002; Leach et al., 2008; Roccas, Sagiv, Schwartz, Halevy, & Eidelson, 2008, for reviews). However, the sub-components in multi-dimensional models vary substantially across studies. Therefore, in this review we follow Henry Tajfel who in 1978 defined social identification as an individual's evaluative and emotional relationship to the group. This one-dimensional definition refers to the *affective* significance that an individual attaches to one's ingroup. Indeed, recent research

investigating the relationship between the single statement " I identify with my group" and a multi-component measure (e.g., Leach et al., 2008), demonstrated that this single item most strongly relates to the affective components of identification (Postmes, Haslam, & Jans, 2012). Without casting any doubts on the empirical work and utility of multi-dimensional models of identification, in this review we adopt Tajfel's (1978) one-dimensional definition in order to answer the question of *how* people identify with ingroups.

We start this review from the assumption that in order to identify, people should perceive a certain amount of mental overlap between their self-concept and the ingroup concept (Smith & Henry, 1996). The greater the perceived overlap between the self and the ingroup, the more people identify (Coats, Smith, Claypool, & Banner, 2000; Tropp & Wright, 2001). But where does this self-group overlap come from? According to Self-Categorization Theory (SCT; Turner, Hogg, Oaks, Reicher, & Wetherell, 1987) self-group overlap emerges top-down, via the assimilation of the self-concept to an ingroup's prototype, a process called *self-stereotyping*. To illustrate this process, imagine Ron, a die-hard soccer fan. He completely dresses in the typical colors of the soccer team and behaves fanatically at the stadium on behalf of his team. Clearly, Ron assimilates himself to the soccer team's prototypical features. In fact, who he is in terms of his personality (i.e., introverted, organized, sweet-tooth) is irrelevant to this process. More generally stated, according to self-stereotyping principles, a bond with an ingroup emerges based on the activation of the *social self* (as defined by prototypical group norms and values) whereas the *personal self* (the unique individual, different from others) shifts to the background (i.e., depersonalizes; Turner et al., 1987).

More recent research has shown that there is yet another way to create a mental bond between the self and the ingroup, namely bottom-up via *self-anchoring*. Self-anchoring is the opposite process from self-stereotyping; information about the *personal* self-concept is used as an anchor to define an ingroup (Cadinu & Rothbart, 1996). To illustrate this process, imagine Mark, a newcomer in an organization. He considers himself to be a very creative person. Since Mark is unfamiliar with the organization's typical norms and values, he shapes a mental bond with the organization by generalizing his creative self to the group. This results in an overlapping perception of the self and the ingroup, so that Mark views the new organization as creative too. Hence, in contrast to self-stereotyping principles, according to self-anchoring principles, the personal self can play a central role in shaping a bond between the self and the ingroup[2].

To date, self-anchoring and self-stereotyping are both well-established concepts in social-psychological literature. Their prevalence and consequences for group functioning have already been extensively studied, specifically in relation to ingroup favoritism (self-anchoring: e.g., Cadinu & Rothbart, 1996; Clement & Krueger, 2002; Krueger, 2007; Otten & Wentura, 2001; self-stereotyping: e.g., Hogg & Turner, 1987; Voci, 2006). Importantly however, thus far self-anchoring and self-stereotyping have lived relatively separate lives in the literature. They have hardly been investigated simultaneously for their joint impact on group phenomena. In fact, in the rare case that researchers did investigate both processes simultaneously, contrasting results were found on their relative importance. On the one hand, empirically supported claims have been made that self-stereotyping explains more variance in group processes than self-anchoring, (e.g., Karniol, 2003; Guimond, Chatard, Martinot, Crisp & Redersdorff, 2006), while on the other hand empirical support was found that self-anchoring, rather than self-stereotyping, is the more relevant process (e.g., Mussweiler, 2003; Krueger, 2003; Robbins & Krueger, 2005; Krueger, 2007; Didonato, Ullrich, & Krueger, 2011).

So far, it remains unclear what may account for these contrasting findings. Moreover, there is very little insight in whether and how self-anchoring and self-stereotyping may serve as two cognitive routes to social identification. Is it true that self-anchoring and self-stereotyping function as functional antagonists, or can the *social* and the *personal* self go hand in hand in attaining social identification? In this review, we opt for an integrative approach, and introduce self-anchoring and self-stereotyping as two distinct but complementary pathways to social identification. We propose that neither self-anchoring, nor self-stereotyping is in principle a more relevant process in creating a self-group overlap (for a similar view, see Cho & Knowles, 2012). Rather, we will outline that the mixed evidence on the relative importance of self-anchoring or self-stereotyping (e.g., Karniol, 2003; Robbins & Krueger, 2005) can be largely attributed to (1) methodological inconsistencies in the measurement of both processes and (2) differences in properties of the group context in which both processes were investigated. Based on this analysis, we will introduce the Cognitive Dual-Pathway Model to Social Identification to demonstrate that both self-anchoring and self-stereotyping are relevant cognitive routes to social identification. Moreover, we will outline for *whom* (individual differences) and *when* (group context factors) either one of the two processes is most beneficial for social identification.

In this review, we will first provide a brief overview of self-stereotyping and self-anchoring research and discuss the different viewpoints on the relative

importance of the two processes. Next, we will provide a critical evaluation of prior methodological approaches to operationalize self-anchoring and self-stereotyping and formulate important measurement criteria that allow for their joint investigation. Subsequently, we will introduce the Cognitive-Dual pathway Model to Social Identification and discuss recent empirical studies showing that self-anchoring and self-stereotyping indeed both significantly account for people's level of social identification (van Veelen, Otten, & Hansen, 2011). This forms the basis for our model and the conceptualization of self-anchoring and self-stereotyping as two cognitive means to the same end. Finally, we will demonstrate the dynamic application of the cognitive dual-pathway model to different group situations. Specifically, we will outline that social identification may be attained via different cognitive pathways depending on the properties of *group context* at stake: In some social situations, assimilation to group prototypes may work best (i.e. self-stereotyping) to shape a group bond, whereas in other situations relying on the personal self (i.e., self-anchoring) may be work best (e.g., van Veelen, Otten, & Hansen, 2012a; cf. Robbins & Krueger, 2005). We will discuss these *group context properties* and additionally *individual differences* in relation to the cognitive pathways to social identification and we will argue that different situations may call for a different cognitive approach to successfully identify with ingroups.

Self-stereotyping and self-anchoring

In order to identify with an ingroup, the concept of self and ingroup should be inextricably linked (Tropp & Wright, 2001). Already in 1980, Howard and Rothbart suggested there might be two directional processes to infer similarity between the self and the ingroup, namely one based on the personal (i.e., self-anchoring) and one based on the social self (i.e., self-stereotyping). Despite this suggestion, the traditional assumption that self-stereotyping is *the* cognitive process underlying identification (Turner et al., 1987) is still firmly grounded in today's conceptualizations of social identification (Leach et al., 2008). In the current section, we will provide background information on the self-stereotyping and self-anchoring literature, and elaborate on theoretical and empirical contradictions concerning the relative importance of self-anchoring versus self-stereotyping to create self-ingroup overlap.

What is self-stereotyping?

Building on Social Identity Theory (SIT, Tajfel & Turner, 1979), SCT (Turner et al., 1987) provides a cognitive framework for how people form a connection between the self and the ingroup. SCT argues that people belong to groups to the extent that they define, describe and evaluate themselves in terms of group/category labels, and apply the in-groups' norms and values onto themselves. More specifically, SCT proposes that each individual has a *personal self* (defined by a person's unique characteristics) and a *social self* (defined by prototypical group characteristics), which exist at opposite ends of the same continuum. When the social self is salient (e.g., when Ron's favorite soccer team plays an important home game) the personal self shifts to the background, or depersonalizes [see also social identity model of deindividuation (SIDE), Postmes & Spears, 1998]. Consequently, ingroup members define and behave in accordance with prototypical group characteristics (e.g., Ron wears the team shirt and shouts fanatically to support his team at the stadium). This conformity to ingroup norms is defined as *self-stereotyping*.

After its theoretical establishment in SCT, many studies demonstrated the self-stereotyping process empirically. Without claiming to be exhaustive, we will give some prominent examples: Evidence was obtained that the tendency to self-stereotype is stronger when an intergroup context is salient compared to when an intragroup context is salient (Hogg & Turner, 1987). Similarly, self-stereotyping was shown to be stronger when a social identity is salient as compared to when a personal identity is salient (Lorenzi-Cioldi, 1991, Onorato & Turner, 2004). Moreover, minority or low status ingroup members were shown to self-stereotype more strongly than majority or high status members (Cadinu, Latrofa, & Carnaghi, 2012; Pickett, Bonner, & Coleman, 2002; Simon & Hamilton, 1994, Spears et al., 1997), because the ingroup identity is especially salient and important to the self-concept for members of minority or low status groups (Latrofa, Vaes, Cadinu & Carnaghi, 2010). Indeed, research subscribing to this interpretation showed that category salience (Verkuyten & Nekuee, 1999; Hundhammer & Mussweiler, 2012) and meaningfulness of the social category (Simon, Hastedt, & Aufderheide, 1997) are positive predictors of self-stereotyping. Furthermore, although previous research showed that self-stereotyping is only present regarding *positive* ingroup stereotypes, but not regarding *negative* ingroup stereotypes (i.e., selective self-stereotyping; Biernat, Vescio & Green, 1996), later research has shown that low status group members attribute both positive and negative group stereotypes to the self (positive self-stereotyping and negative self-stereotyping; Latrofa, Vaes, Pastore, Cadinu, 2009) and that negative self-stereotyping is also

present using implicit measures (Lun, Sinclair, & Cogburn, 2009).

Aside from antecedents, self-stereotyping also has relevant *consequences* for group processes. For example, self-stereotyping serves a protective function for group members' well-being in response to ingroup threat (Branscombe, Schmitt, 1999; Latrofa et al., 2009; Latrofa, Vaes, Cadinu, 2012; Spears et al., 1997). Also, self-stereotyping has been related to system justification theory (Jost & Banaij, 1994), such that in a situation of status inequality, self-stereotyping serves to legitimize the hierarchical system and to perceive it as fair and desirable (Laurin, Kay, & Sheperd, 2011). Moreover, a domain that has especially received research attention is the impact of self-stereotyping on *ingroup favoritism* (e.g., Voci 2006, Pickett et al, 2002).

According to SCT (Turner et al., 1987), social categorization instigates self-stereotyping. This subsequently results in a positive bias towards one's ingroup above and beyond relevant outgroups (i.e., ingroup favoritism). Because we define ourselves in terms of ingroup prototypes (self-stereotyping), on the basis of which we positively distinguish ingroups from outgroups, ingroup favoritism at the group-level (e.g., The Italian soccer team is much better than the Dutch team) has been posited to fulfill our need for self-enhancement at the individual level (e.g., I am good because I am an Italian soccer fan; Hogg & Abrams, 1990; Tajfel & Turner, 1986).

Importantly, ingroup favoritism is a remarkably reliable phenomenon (see for reviews e.g. Brewer, 1979; Hewstone, Rubin, & Willis, 2002; Mullen Brown & Smith, 1992; Tajfel, 1982), which may even emerge under the most minimal laboratory conditions. People who are randomly and anonymously categorized into one of two meaningless groups on the basis of some trivial criterion, still favor their ingroup over the outgroup (Rabbie & Horwitz, (1969). In fact, recent research has shown that under certain circumstances, ingroup favoritism may even be more prevalent in minimal than in real groups (e.g., Spears, Jetten, Scheepers, & Cihangir, 2009). However, in Minimal Group Paradigms (MGP; e.g., Billig & Tajfel, 1973; Tajfel, Billig, Bundy, & Flament, 1971), the explanation of ingroup favoritism in terms of a self-stereotyping process serving a self-enhancement need (Tajfel & Turner, 1986; Hogg & Abrams, 1990) has been widely criticized (Brown, 2000; Cadinu & Rothbart, 1996; Mummendey & Otten, 1998; Robbins & Krueger, 2005; Otten & Wentura, 1999; Krueger, 2007; Rubin & Hewstone, 1998).

One of the main problems with the self-stereotyping approach to explain ingroup favoritism and self-enhancement in the MGP is the "minimal" nature of these groups. Given its lack of prototypical group stereotypes, one may wonder on what grounds people come to evaluate their ingroup positively and use this information to

infer their self-image. In other words, what exactly should group members in an MGP assimilating to when in fact, no knowledge of the group's characteristics is available? This question seems hard to answer. Thus, despite the unequivocal evidence showing that 'mere' categorization may elicit ingroup favoritism, self-stereotyping can hardly account for this effect. Importantly, this criticism formed the starting point for Cadinu and Rothbart (1996) to investigate self-anchoring as an alternative account: "Overall, ingroup favoritism in the minimal group paradigm is a well-established phenomenon, but the exact reasons for this favoritism remain unclear" (p. 661).

What is self-anchoring?

Self-anchoring, or the generalization of *personal characteristics* onto the ingroup, indicates that one does not necessarily have to rely on group prototypes (i.e., self-stereotyping) to create a mental link between the self and the ingroup. Instead this link can be based on using the *personal self* as a positive standard to define an ingroup and distinguish it from relevant outgroups. Specifically, Cadinu and Rothbart (1996) reasoned that:

- People generally possess favorable beliefs about themselves (see also Baumeister, 1998; Diener & Diener, 1996; Taylor & Brown, 1988 for further support for this assumption);
- In minimal groups people infer ingroup characteristics from the positively evaluated characteristics of the self;
- Based on projection of the personal self onto the ingroup (i.e., self-anchoring), the ingroup is regarded favorably and, by principle of differentiation (Doise & Dann, 1976), the outgroup will be regarded as less favorably.

In the last experiment with minimal groups, Cadinu and Rothbart (1996) provided participants with either selective information about the group that they belonged to, or with information about the personal self. Subsequently, participants had to rate the self, or the ingroup, respectively on the applicability of this selective information. This between-participants manipulation aimed to elicit either a self-stereotyping process (i.e., generalization of provided ingroup information to the self) or a self-anchoring process (i.e., generalization of provided self-information to the ingroup). Results showed that the tendency to generalize self-information to the ingroup was twice as large as the generalization of ingroup information to the self, which provided clear

evidence for self-anchoring as being the most prevalent process compared to self-stereotyping in a minimal group condition. Moreover, this tendency was specifically shown for *positive* self-information projected onto the ingroup, but not onto the outgroup. This latter finding further corroborated the assumption that a positive self-image can account for ingroup favoritism in minimal groups (e.g., Gramzow & Gaertner, 2005).

In subsequent research, the self-anchoring effect in the minimal group paradigm was further supported and refined by Krueger and colleagues. Supporting the differential impact of self-anchoring on ingroups compared to outgroups, Krueger and Clement (1996) showed that the level of self-anchoring differed more strongly between the ingroup and the outgroup when intergroup salience increases. Importantly, whereas Cadinu and Rothbart (1996) based their self-anchoring account for ingroup favoritism in the MPG on two assumptions [(1) the assimilation of the ingroup to the positively evaluated self; (2) the differentiation principle between in- and outgroups], work by Krueger and colleagues propose a more parsimonious account: they assume only an egocentric projection of the positive self to the ingroup as an account for ingroup favoritism. According to Krueger, the differentiation principle between ingroup and outgroup is not necessary for ingroup favoritism to emerge: it is the asymmetry in the strength of association between the positive self and the ingroup on the one hand, and the outgroup on the other hand, that instigates positive distinctiveness of the ingroup from the outgroup (Clement & Krueger, 2002; Krueger, 1998a; Didonato et al., 2011). Later research corroborated this notion with implicit measures (affective priming), showing that favorable ingroup evaluations do not necessarily rest upon explicit social comparisons with outgroups, but may rather rely on a simple association with the typically positive self (Otten & Moskowitz, 2000; Otten & Wentura, 1999; Gramzow, Gaertner & Sedikides, 2001; Otten, 2002). Importantly, these findings further revealed that an intergroup phenomenon (ingroup favoritism) could be explained at an intragroup level, by merely focusing on the dynamic between the self and the ingroup (see also van Hoomissen & van Overwalle, 2010).

Furthermore, self-anchoring was shown to be more than a valence effect; by explicitly disentangling projection of valence from projection of self-information in relation to group evaluations, researchers showed that self-information was a stronger predictor of ingroup favoritism than mere valence (Otten & Wentura, 2001) or social desirability of the evaluated traits (Clement & Krueger, 2000, 2002). More generally, self-anchoring implies that the self can serve as an informational base to distinguish an

ingroup from an outgroup (Gramzow et al., 2001).

In sum, in minimal groups clear evidence was obtained for the self-anchoring process: When no information is available about an intergroup context, people seek for creative ways to give meaning to, and distinguish between the ingroup and the outgroup (i.e., creative distinctiveness, Spears et al. 2009).The projection of personal traits onto the ingroup (i.e., self-anchoring) explains how such meaning and positive evaluation of ingroups relative to outgroups may emerge.

Contrary to minimal groups, in real, well-established groups providing evidence for a self-anchoring process is more challenging. In real groups, information about group stereotypes is typically available, which implies the option to assimilate the self to ingroup stereotypes (i.e, self-stereotyping). Hence the question is: Considering that in real groups self-stereotyping is a viable option, is self-anchoring still a relevant process to create self-ingroup overlap in this group context?

The first to address this question was Otten (2004), who conducted a study among high school students (i.e., a real group) as the target social category and investigated the strength of the association between self and ingroup trait-ratings while varying the order of self and ingroup ratings (similar to Cadinu & Rothbart, 1996). Whereas Otten (2004) could only provide tentative evidence for a self-anchoring effect, more compelling evidence for the relevance of self-anchoring in real groups was provided later, for example among gender groups (Otten & Epstude, 2006), (psychology) students (Riketta & Sacramento, 2008; van Veelen & Otten, 2008; van Veelen et al., 2011), and using the Dutch nationality as a social category (van Veelen et al., 2012a). Overall, this research confirmed that the relevance of self-anchoring is not restricted to minimal groups, but also needs to be considered in real groups.

Self-anchoring or self-stereotyping?

From the previous section it is clear that both self-stereotyping and self-anchoring are well-established phenomena: both contribute to the creation of self-ingroup overlap, but conceptually this overlap comes from opposite directional pathways. Moreover, with the introduction of self-anchoring in real group situations, we turn to the question of whether self-ingroup overlap should be attributed to a self-anchoring or self-stereotyping process. Specifically, if both the personal self and the social self can potentially serve as an informational source to create self-ingroup overlap, is there one process that is generally more important or relevant?

There are contrasting viewpoints on this matter. From the self-stereotyping perspective, some researchers argue that generic knowledge about (group) prototypes serves as a default for social inference; any self-group overlap based on the personal self as a point of reference would either be impossible or indicate an error in social judgment (e.g., Karniol, 2003; Chandler, 1976; Festinger, 1954; Deschamps & Devos, 1998). In contrast, from the self-anchoring perspective, some researchers argue that the personal self is the most accessible standard in the cognitive system; therefore personal self-knowledge should play the most prominent role and should be the default in making social inferences (e.g., Epley, Keysar, van Boven, Gilovich, 2004; Hovland & Sherif, 1952; Mullen, 1985; Krueger, 2003; 2007; Robbins & Krueger, 2005). Where do these opposing viewpoints come from?

Self-stereotyping as the default process

Within research on social inference, focusing more generally on the self in relation to the social context (i.e., referring not only to groups, but also, for example to other persons), theoretical support for self-stereotyping as the default process stems from the *self-as-distinct model* (Karniol, 2003). In this model, the author puts forward a *protocentric* view of the self in relation to others, stating that generic representations or *prototypes* (i.e., group stereotypes) serve as a default for inferring similarity between the self and groups or others. Accordingly, using self-knowledge to make social inferences should only occur in developmentally immature social beings: this would be a transitional stage in childhood that passes with maturation, when people are able to successfully transport themselves into the perspective of other people or groups (Chandler, 1976; Selman, 1980). Moreover, according to Karniol (2003), the use of the personal self to infer similarity to others is hard to reconcile with the notion that the self is mainly a unique entity, used to differentiate oneself from others (e.g., Brewer, 1993; Deschamps & Devos, 1998). How can an entity that is classified as being distinct serve as a tool to infer similarity?

Although theoretically different, the minor role of the personal self in social perception is also emphasized in SCT. Specifically, an important proposition of SCT regarding the relation between the self and the ingroup, is the *functional antagonism* of social self and personal self. Following the principle of depersonalization, people's relation to ingroups automatically enforces the assimilation of the self to group prototypes, and thus the shift away from the personal self. This assumption implies

that, when building a relationship between the self and the ingroup, there is no role for the personal self, and hence no room for self-anchoring (Turner et al., 1987; Simon et al., 1997; Verkuyten & Nekuee, 1999; Leach et al., 2008; Hogg & Turner, 1987; Tropp & Wright, 2001; Smith & Henry, 2001; Hogg, 2001).

Empirical support for the self-stereotyping-as-default point of view was found in research showing that the strength of the association between the self and the ingroup is stronger when judgments about the self are based on prototypical ingroup information than when judgments about the ingroup are based on self information (Simon & Hastedt, 1997; Biernat, Manis, & Kobrynowicz, 1997). Furthermore, several studies empirically demonstrated that the correlation between self and ingroup ratings is higher when ingroup ratings precede self-ratings than vice versa, suggesting the prevalence of self-stereotyping as compared to self-anchoring (Biernat et al., 1996; Guimond et al., 2006).

Self-anchoring as the default process

In contrast, proponents of the self-anchoring viewpoint argue that the self serves as the default for making judgments and predictions about others in self-relevant domains, and that this tendency can hardly be overridden by any inference based on stereotypes (e.g., Didonato et al., 2011; Krueger, 2007). The personal self is seen as the locus of experience and thus as basic source of predictions about others. Specifically, it is argued that with self-anchoring, there is always a direct link between a person's personal perception and a social stimulus, whereas self-stereotyping would always require additional information about generic representations in the social context. Hence, the self is seen as the most immediate, parsimonious source of information; inferences based on self-knowledge are therefore likely to overrule generic knowledge (Gordon, 1992; Krueger, 2003, Epley et al., 2004).

Furthermore, self-anchoring proponents argue that self-knowledge can be used to infer both similarity and dissimilarity with a social category (Mussweiler, 2003, Krueger, 2003, Sedikides, 2003). Instead of interpreting this capacity as problematic for the inferential status of the personal self (Karniol, 2003), these authors argue that this feature emphasizes the informational richness of the self.

There is a substantial body of research in support for the self-anchoring as default point of view. From a developmental perspective, Abrams (2011) recently

showed that among children, self-anchoring does not decrease with age, which runs counter to Karniol's (2003) assumption that egocentrism decreases with the development of the theory of mind. Other literature has shown that compared to ingroup-ratings, self-ratings are made faster (Cadinu & De Amicis, 1999; Clement & Krueger, 2000), more easily, more accurately and more consistently over time (Krueger & Stanke, 2001). Moreover, other research has directly shown that inferences from self to ingroup are stronger compared to inferences from ingroup to self (Cadinu & Rothbart, 1996; Clement & Krueger, 2002; Krueger & Stanke, 2001; Otten & Epstude, 2006; see Krueger, 2007 for overview). Clearly, these findings directly contrast results demonstrating self-stereotyping as the default process.

Conclusion: Self-anchoring or self-stereotyping?

Taken together, there are different viewpoints on whether either ingroup prototypes or the personal self serves as the default to create self-ingroup overlap, and both viewpoints are supported by empirical research. Moreover, the empirical evidence on the relative importance of self-stereotyping over self-anchoring and vice versa is also mixed. Yet, thus far neither side has been successful in completely ruling out the relevance of the respective opposite process, nor offered a clear-cut explanation for why sometimes self-stereotyping and sometimes self-anchoring is more prevalent in accounting for self-ingroup overlap.

From our perspective, self-anchoring and self-stereotyping should not be conceived as two antagonistic processes or conceptual enemies, competing in the race to create the strongest self-group overlap, but rather as two processes that can complement each other (see Cho & Knowles, 2012 for similar argument[3]). We will argue and demonstrate that both processes can simultaneously yet distinctly account for self-ingroup overlap, and most importantly, that both contribute to positive ingroup evaluation and identification with ingroups (van Veelen et al., 2011). In our view, there are two important issues that might potentially form the key to reconcile the contrasting viewpoints on the prevalence of self-stereotyping and self-anchoring respectively.

First, self-anchoring and self-stereotyping have been generally investigated in very *different types of groups*. The differences found in the stronger prevalence of self-anchoring or self-stereotyping are therefore hardly comparable and might even be easily explained by the nature of the group context itself. We will return to this issue

later when we present our Cognitive Dual-pathway Model to Social identification and elaborate on how properties of the group context impact on the two pathways to identification.

The second point concerns the *measurement* of self-anchoring and self-stereotyping. In order to gain a full understanding of the relative strength of self-stereotyping and self-anchoring, and their impact on ingroup evaluation and identification, both processes should in fact be compared within the same research paradigm. Nevertheless, this has rarely been done, and even when such comparisons are made, the methodological approach to measure both constructs has often biased the interpretation of one process as being dominant over the other. Moreover, in prior research, a large variety of measures have been used to operationalize each concept, which may have obscured the interpretation of self-group overlap as unidirectionally stemming from either group prototypes (i.e., self-stereotyping) or from the personal self (i.e., self-anchoring). In the next section, we will first focus on these measurement issues.

The measurement of SA and SST

Whereas conceptually it is straightforward to disentangle self-anchoring from self-stereotyping as two opposite routes to self-ingroup overlap, empirically disentangling them has proven to be much more challenging (see also Otten, 2004). In our view, this is in itself is already an important reason why scholars often focus on one process at a time, thereby running the risk of over-interpreting its importance relative to the other. Therefore, as we will discuss in this section, to be able to interpret self-group overlap unequivocally as a uni-directional inference process and to assure its discriminant validity, one should ideally take into account both self-anchoring and self-stereotyping simultaneously.

Moreover, even when investigated separately, it is also important for self-stereotyping and self-anchoring measures to show construct validity (see also Krueger, Acevedo & Robbins, 2006). However, this has not always been the case. Generally, scholars have used a large variety of measures to tap into the same inference process. This has been especially the case for self-stereotyping. Such variety of operationalizations may obscure the definition of the construct, which leads to the question: When does an operationalization of self-stereotyping (self-anchoring) unequivocally measure the construct of self-stereotyping (self-anchoring)?

In this section we will first provide a set of criteria, drawn from the previous literature, which should ideally be taken into account when measuring self-anchoring and/or self-stereotyping. Subsequently, we will evaluate the measurement instruments reported in the literature based on these criteria and we provide a taxonomy in Table 1. Finally, we will focus on how to disentangle self-anchoring and self-stereotyping in a single research paradigm so that they become comparable for their relative impact on social identification[4].

Properties of ideal measurement

In order to evaluate the operationalization of self-stereotyping and self-anchoring measures we first need to define the necessary elements within both constructs. Following from previous work, we define self-stereotyping as an inference process in which *self-ingroup overlap* emerges *unidirectionally*, by applying *prototypical ingroup characteristics* to the self (e.g., Turner et al., 1987; Pickett et al., 2002; Guimond et al., 2006; Otten & Epstude, 2006; Krueger, 2007; Krueger, Acevedo, & Robbins, 2006; Latrofa et al., 2009; 2010). Conversely, we define self-anchoring as an inference process in which *self-ingroup overlap* emerges *unidirectionally*, by applying *personal characteristics* to the ingroup (e.g., Cadinu & Rothbart, 1996; Otten & Wentura, 1999; 2001; Otten & Epstude, 2006; Van Veelen et al, 2011; Latrofa et al., 2010). Based on these defining elements, four methodological criteria can be formulated that should ideally be met when measuring self-anchoring and self-stereotyping. The criteria are: *overlap, directionality, valence*, and *content*.

Overlap. Self-stereotyping and self-anchoring processes are concerned with the emergence of overlap between self and ingroup. Therefore, following from connectionist models by Smith and colleagues (Smith, Coats & Walling, 1999; Smith & Henry, 1996), the inference process should ideally include one measure informing us about the perception of the ingroup, and another measure about the perception of the personal self. The degree of agreement between the two will serve as a proxy for self-ingroup overlap. To illustrate this, if we want to measure self-group overlap for Carla, a psychology student, we need two measures from her: one informing us about her perceptions of her personal self, and one informing us about her perception of the group 'psychology students'. These two measures would allow calculating the strength

of self-ingroup overlap (more detailed information on self-ingroup overlap calculations will follow). Overlap is an important first and primary measurement criterion, because it ensures that either self-descriptions are in line with participants' conception of the ingroup's stereotypes, or that ingroup-descriptions are in line with participants' conception of the personal self (Latrofa et al., 2010; Otten & Epstude, 2006; van Veelen, et al, 2011).

Directionality. From the example above, it follows that when general self-ingroup overlap is established, we need to know *where* this overlap comes from. In real groups the informational base of self-ingroup overlap can either stem from the personal self or from the prototypical group characteristics. Hence, to be able to infer directionality in self-ingroup overlap, we should ensure that either the personal self affects subsequent ingroup ratings (i.e., self-anchoring) or the ingroup's prototype affect subsequent self-ratings (i.e., self-stereotyping). One way to elicit directionality is to vary the *order* of self and ingroup ratings. This can be done between-participants: For one half of the participants, information about the personal self is measured or provided first, and subsequently the ingroup is rated based on this self-information. For the other half, the opposite procedure is implemented to infer a *first-ingroup-then-self* sequence (Cadinu & Rothbart, 1996; 2012). A more rigorous way to establish directionality is to have a longitudinal design, in which all participants rate the personal self on a first measurement occasion and then the ingroup, and subsequently the self again on a second measurement occasion (Latrofa et al, 2010, exp. 1; van Veelen et al., 2011; 2012a). In this case, both self-anchoring and self-stereotyping are measured within-participants.

Valence. Thirdly, it is important to take into account valence as a potentially confounding factor. The idea underlying self-anchoring and self-stereotyping is that these are informational ingroup- or self-defining processes that should be distinguished from self- or ingroup-enhancement processes (Cadinu et al., 2012). For example, imagine Mark again, the newcomer in the organization. Aside from describing himself as 'creative' he also perceives himself as 'sloppy' and 'cheerful'. If Mark only generalizes his 'cheerfulness' to the ingroup but not his 'sloppiness', are we then still talking about self-anchoring (i.e., I am X, and my group is X too) or is the self, in this case, simply a source of positive ingroup bias (i.e., I like myself and therefore my group)? In principle, it could be either way. Therefore it is important to take into account valence effects. There are several ways to do so. First, one could

make valence part of the research design by making sure that an equal number of positive and negative traits is used to measure self-ingroup overlap and then implement valence as a within-participants factor in the analyses (Otten & Wentura, 2001; Otten & Epstude, 2006). Second, one could pilot test traits so that only traits that are neutral in valence are involved in the measure (van Veelen et al., 2011). Third, one could partial out valence of traits within the score itself, by calculating a partial correlation between self and ingroup ratings, while correcting for the valence or social desirability of the traits (e.g., Cadinu et al., 2012; Krueger & Clement, 1994; De La Haye, 2000). A combination of selecting only neutral traits and a partial correlation provides an even more conservative test to rule out valence effects as an alternative explanation of self-ingroup inference processes.

Content. A final and crucial criterion to take into account refers to what kind of information people use to make inferences about the self or the ingroup, namely the *content* (i.e., stereotype relevant or irrelevant) of the inferred information. With self-anchoring, it is essential that inferences about the ingroup are based exclusively on information about the personal self (stereotype-irrelevant content) whereas with self-stereotyping it is essential that inferences about the self are based exclusively on information about the ingroup's stereotypes (stereotype-relevant content). Ideally, the content of the traits that form the basis to infer self-ingroup overlap should be the same across self-anchoring and self-stereotyping measures to optimally compare the relative impact of each process. Within a MGP, there is a possibility to achieve this by giving similar bogus feedback to participants about either their personality or the minimal group. Such feedback could for example refer to relatively novel psychological attributes fabricated by the experimenter. In this way, the strength of the two directional routes to self-group overlap can be compared across conditions, while the content of self or ingroup information is kept constant (see for example Cadinu & Rothbart, 1996; 2012).

An obvious shortcoming of providing false feedback about personality or group attributes on novel traits in minimal groups is that this set-up is rather artificial. Therefore, content is often *measured* rather than *manipulated* by asking participants to rate the self and the novel ingroup along a set of real, existing traits (e.g., Otten & Wentura, 2001; Clement & Krueger, 2002). Importantly, one should be aware that one consequence of measuring existing traits in minimal groups is the imbalance in the availability of self-information for self-anchoring versus group-information for self-stereotyping. Put differently, in minimal groups, information about the personal self is

more real and readily available than information about ingroup stereotypes.

When translating self-anchoring and self-stereotyping to *real group* situations, fulfilling the content criterion is bounded by reality constraints even further than in minimal groups. In real groups, the content of self-anchoring or self-stereotyping measures should coincide with the available knowledge about the individual self or the ingroup stereotype, respectively. Hence, to compare self-anchoring with self-stereotyping in the real world, the content of inferred traits cannot be similar for both processes. To illustrate this, to capture self-stereotyping, only traits unequivocally descriptive of the relevant social category (i.e., stereotype relevant) should be imperative. For example, traits such as 'good listener', 'self-critical' and 'emotionally intelligent' can be taken as stereotypical of psychology students (van Veelen et al., 2011) and may therefore be diagnostic of a self-stereotyping process when they are generalized to the self. In contrast, to capture self-anchoring in a real group, only traits that are a priori known to be descriptive of the personal self (i.e., stereotype-irrelevant) should be imperative. For example, if Carla, the psychology student, is a dog-lover (this should be independent of being a psychology student), this information may be diagnostic of a self-anchoring process to the extent that Carla infers psychology students to be dog-lovers too. In addition, for self-anchoring the personal self should be rated on stereotype-irrelevant traits *prior* to making the social category salient. If not, the content of personal self-ratings may already be contaminated by the activated social identity (Latrofa et al., 2010; Riketta & Sacramento, 2008; van Veelen et al., 2011).

Summing up, there are four criteria that ideally should be taken into account when establishing construct validity of self-anchoring and/or self-stereotyping measures, namely overlap, directionality, valence and content. Moreover, the discriminant validity of each measure is most optimally assured when both measures are taken into account simultaneously in one research design. Specifically, considering that both self-stereotyping and self-anchoring are means to create self-group overlap, one should consider multicollinearity between the two variables (i.e., overlapping variance between self-anchoring and self-stereotyping). Therefore, if the goal is to compare the unique variance in self-ingroup overlap explained by either self-anchoring or self-stereotyping, one should measure both processes simultaneously in one study design.

Table 7.1:
Overview of operationalization of self-stereotyping and self-anchoring, evaluated based on the four measurement criteria: overlap, directionality, content and valence. Note: codes and abbreviations in the table are explicated in the legend below the table.

Type of measure		Authors	Self-stereotyping		Self-anchoring	
			Minimal	Real	Minimal	Real
Explicit	**General similarity**	Leach et al., 2008		• Overlap: no • Direction: no • Content: no • Valence: no		
		Simon, Pantaleo & Mummendey, 1995		• Overlap: no • Direction: no • Content: no • Valence: no		
		Simon, Hastedt & Aufderheide, 1997		• Overlap: no • Direction: no • Content: no • Valence: no		
		Verkuyten & Nekuee, 1999		• Overlap: no • Direction: no • Content: no • Valence: no		
		Spears, Doosje, Ellemers, 1997		• Overlap: no • Direction: no • Content: no • Valence: no		
	Self descrip-tive	Hogg & Turner, 1987		• Overlap: no • Direction: no • Content: ST • Valence: pos neg neut		
		Hundhammer & Mussweiler, 2012		• Overlap: no • Direction: no • Content: ST • Valence: no		

Type of measure			Authors	Self-stereotyping		Self-anchoring	
				Minimal	Real	Minimal	Real
			Jetten, Postmes, & McAuliffe, 2002		• Overlap: no • Direction: no • Content: ST • Valence: no		
			Laurin, Kay, & Sheperd, 2011		• Overlap: no • Direction: no • Content: ST • Valence: no		
			Lun, Sinclair, Cogburn, 2009[a]		• Overlap: no • direction: no • Content: ST • Valence: pos & neg		
			Onorato & Turner, 2004[b]		• Overlap: no • direction: no • Content: ST • Valence: no		
			Pickett, Bonner & Coleman, 2002		• Overlap: no • direction: no • Content: ST & SA • Valence: pos & neg		
			Simon & Hamilton, 1994		• Overlap: no • Direction: no • Content: ST • Valence: pos & neg		
			Simon, Glassner-Bayerl & Stratenwerth, 1991		• Overlap: no • direction: no • Content: ST • Valence: pos & neg •		
	Overlap scores	*Pictorial*	Tropp & Wright, 2001; 2003[c]		• Overlap: yes • Direction: no • Content: no • Valence: no		

Type of measure		Authors	Self-stereotyping		Self-anchoring	
			Minimal	Real	Minimal	Real
	Squared distance	Cadinu & Rothbart, 1996; 2012	• Overlap: yes • Direction: group → self • Content: ST[d] • Valence: pos & neg		• Overlap: yes • Direction: self → group • Content: NA • Valence: pos & neg	
		Ryan & Bogart, 1997; 2001		• Overlap: yes • Direction: group → self • Content: ST • Valence: pos & neg		
	Profile r	Ames, 2004a – Study 1[e]				• Overlap: yes • Direction: self → group • Content: SA • Valence: no
		Biernat, Vescio & Green, 1996		• Overlap: yes • Direction: group → self • Content: ST & SA • Valence: pos & neg		
		Bianchi,Machunsk, Steffens,& Mummendey, 2009				• Overlap: yes • Direction: group → self • Content: SA and SST • Valence: pos & neg
		Cadinu, Latrofa, & Carnaghi, 2012		• Overlap: yes • Direction:group←→self • Content: ST and SA[f] • Valence: pos & neg		
		Cho & Knowles (2012 Studies 1 & 2)		• Overlap: yes • Direction: group → self • Content: ST[g] • Valence: neutral		• Overlap: yes • Direction: self→group • Content: SA[h] • Valence: neutral
		Clement & Krueger, 2000; Study 2			• Overlap: yes • Direction: self →group • Content: NA • Valence: no	

Type of measure	Authors	Self-stereotyping		Self-anchoring	
		Minimal	Real	Minimal	Real
	Clement & Krueger, 2002			• Overlap: yes • Direction: unknown • Content: NA • Valence: neutral	
	Eidelman & Silvia, 2010		• Overlap: yes • Direction: self → group • Content: ST and SA • Valence: pos & neg		
	Didonato, Ullrich, & Krueger, 2011			• Overlap: yes • Order: Self ←→ Group • Content: NA • Valence: pos & neg	
	Guimond, Chatard, Martinot, Crisp, & Redersdorff, 2006		• Overlap: yes • Direction:self←→group • Content: ST • Valence: No		• Overlap: yes • Direction:self←→group • Content: ST • Valence: No
	Krueger & Clement, 1996			• Overlap: yes • Direction: self → group • Content: NA • Valence: neutral	• Overlap: yes • Direction: self → group • Content: no • Valence: neutral
	Krueger & Zeiger, 1993 (Exp. 1)				• Overlap: yes • Direction: group → self • Content: SA & ST • Valence: no
	Krueger & Stanke, 2001				• Overlap: yes • Direction:self → group • Content: no • Valence: yes
	Latrofa, Vaes, & Cadinu, 2012		• Overlap: yes • Direction: self →group • Content: ST & SA[i] • Valence: pos & neg		

Type of measure	Authors	Self-stereotyping		Self-anchoring	
		Minimal	Real	Minimal	Real
	Latrofa, Vaes, Pastore, & Cadinu, 2009		• Overlap: yes • Direction:self←→group • Content: ST & SA • Valence: pos & neg		• Overlap: yes • Direction:self←→group • Content: ST & SA • Valence: pos & neg
	Latrofa, Vaes, Cadinu, & Carnaghi, 2010		• Overlap: yes • Direction: self →group • Content: ST & SA[i] • Valence: pos & neg		
	Otten & Wentura, 2001			• Overlap: yes • Direction: self → group • Content: NA • Valence: pos & neg	
	Otten & Bar-Tal, 2002			• Overlap: yes • Direction: self→ group • Content: NA • Valence: no	
	Riketta & Sacramento, 2008			• Overlap: yes • Direction: self → group • Content: NA • Valence: neutral	• Overlap: yes •Direction: self → group •Content: SA •Valence: neutral
	Sherman & Kim, 2005				• Overlap: yes • Direction: unkown • Content: no • Valence: no •
	van Hoomissen & van Overwalle, 2010[j]	• Overlap: yes • Direction:self←→group • Content: no • Valence: pos & neg		• Overlap: yes • Direction:self←→group • Content: NA • Valence: pos & neg	
	van Veelen, Otten, & Hansen, 2010				• Overlap: yes: • Direction: self → group • Content: SA • Valence: neutral •

Type of measure		Authors	Self-stereotyping		Self-anchoring	
			Minimal	Real	Minimal	Real
		van Veelen, Otten, & Hansen, 2011		• Overlap: yes • Direction: self←→group • Content: ST & SA • Valence: neutral		• Overlap: yes • Direction:self←→group • Content: ST & SA • Valence: neutral
		van Veelen, Otten, & Hansen, 2012a		• Overlap: yes • Direction:self←→group • Content: ST & SA • Valence: neutral	• Overlap: yes • Direction: self → group • Content: SA • Valence: neutral	• Overlap: yes • Direction:self←→group • Content: ST & SA • Valence: neutral
		van Veelen, Hansen, & Otten, 2013a		• Overlap: yes • Direction:self←→group • Content: ST & SA • Valence: neutral		• Overlap: yes • Direction:self←→group • Content: ST & SA • Valence: neutral
Implicit	**Self-descriptive**	Cadinu & Galdi, 2012		• Overlap: no • Direction: no • Content: ST • Valence: pos		
		Cadinu, Galdi, & Maass, 2012		• Overlap: no • Direction: no • Content: ST • Valence: pos		
		Lorenzi-Cioldi, 1991		• Overlap: no • Direction: no • Content: ST • Valence: pos & neg		
		Lun, Sinclair, Cogburn, 2009		• Overlap: no • Direction: no • Content: ST • Valence: pos & neg		
		Onorato & Turner, 2004		• Overlap: no • Direction: no • Content: ST • Valence: pos & neg		

Type of measure	Authors	Self-stereotyping		Self-anchoring	
		Minimal	Real	Minimal	Real
Overlap	Otten & Wentura, 1999			• Overlap: no • Direction: no • Content: SA • Valence:pos & neg	
	Cadinu & De Amicis, 1999		• Overlap: yes • Direction: self→group • Content: no • Valence: pos & neg		• Overlap: yes • Direction: group → self • Content: no • Valence: pos & neg
	Coats, Smith, Claypool, & Banner, 1999		• Overlap: yes • Direction: group → self • Content: no • Valence:no		
	Cho & Knowles, 2012; study 4		• Overlap: yes • Direction: group → self • Content: no • Valence: pos & neg		• Overlap: yes • Direction: self → group • Content: no • Valence: pos & neg
	Machunsky & Meiser, 2009				• Overlap: yes • Direction:self←→group • Content: SA • Valence: no
	Otten & Epstude, 2006		• Overlap: yes • Direction: group → self • Content: ST • Valence: pos & neg •		• Overlap: yes • Order: self → group • Content: SA • Valence: pos & neg
	Smith, Coats, & Walling, 1999		• Overlap: yes • Direction: group → self • Content: no • Valence: pos & neg		
	Smity & Henry, 1996		• Overlap: yes • Direction: group → self • Content: no • Valence: pos & neg		

Type of measure	Authors	Self-stereotyping		Self-anchoring	
		Minimal	Real	Minimal	Real
	Tropp & Wright, 2001		• Overlap: yes • Direction: group → self • Content: no • Valence:no		
	van Veelen & Otten, 2008		• Overlap: yes • Direction: group → self • Content: ST • Valence: pos & neg		• Overlap: yes • Order: self → group • Content: SA • Valence: pos & neg

Note: (1) For *Overlap*, label "no" means that overlap between self and group ratings was not calculated; "yes" means that overlap was calculated. (2) For *Direction*, label "no" means that direction of self-group ratings was not taken into account; "self →group" means that self-ratings were measured prior to group ratings; "group → self" means that group ratings were measured prior to self-ratings; "self ←→ group" means that both directions were measured. (3) For *Content*, label "no" means that content was not taken into account; "SA" means that stereotype-irrelevant traits were used (to measure self-anchoring); "ST" means that only stereotype-relevant words were used (to measure self-stereotyping); "NA" means that the content criterion is not a precondition for an appropriate measure (e.g., when measuring self-anchoring in a completely minimal group). (4) For *Valence*, label "no" means that valence of traits was not taken into account; "pos" means that only positive traits were measured; "neg" means that only negative traits were measured; "neutral" means that traits were neutral in terms of valence and/or controlled for in the calculation of the score (for example based on item popularity).

[a] Lun et al. (2009) is inserted twice in this table because they used both an implicit and an explicit measure of self-descriptive self-stereotyping. [b] Onorato and Turner (2004) was mentioned twice in this table as they adopted more than one methodology to measure self-stereotyping.
[c] Schubert and Otten (2002) developed a similar pictorial measure to capture self-group overlap, but did not claim any directionality for this measure and therefore they are not included in this Table.
[d] Based on bogus feedback manipulation of group stereotypes in minimal group
[e] Ingroup was made salient before self-ratings. Stereotypes were part of the study, but always referred to an outgroup. Studies 2-4 only measured SA to outgroup (not ingroup) and were therefore beyond the scope of this article.
[f] Although 8 stereotype-irrelevant traits were inserted in the methodological approach in this study, they were not included as part of a self-anchoring measure.
[g] Based on bogus feedback manipulation on group stereotypes in real groups.
[h] Based on bogus feedback manipulation on personality traits.'
[i] Although 4 stereotype-irrelevant traits were inserted in the study, they were not included as part of a self-anchoring measure.
[j] An order manipulation of self-group directionality was implemented, but no hypotheses were formulated on self-stereotyping.

Reviewing self-stereotyping and self-anchoring measures.

Table 7.1 provides a taxonomy of different self-anchoring and self-stereotyping measures, evaluated on the four measurement criteria described in the previous section. Aside from distinguishing between types of measures, we also distinguish between types of context (minimal group vs. real group). From Table 7.1, it can be seen that both self-anchoring and self-stereotyping have been measured at the explicit and implicit level. Explicit measures range from indicators of global similarity to the ingroup to trait-level specific overlap scores between self and ingroup ratings. Implicit measures are generally based either on Implicit Association Tests (i.e., IAT; Greenwald, McGhee, & Schwartz, 1998), or response time evidence depicting differences in responses to traits for which the self and the ingroup either match or mismatch (e.g., Smith & Henry, 1996; Otten & Epstude, 2006). We will use the four criteria as standard to review these measures.

Global similarity measures of self-stereotyping. Self-stereotyping has been largely assumed to serve as a cognitive account for social identification, and conceptually self-stereotyping is firmly rooted in the main theories on (inter)group processes (e.g., SIT, Tajfel & Turner, 1979; SCT, Turner et al., 1987; self-esteem hypothesis, Hogg & Abrams, 1990; uncertainty reduction theory, Hogg, 2000; optimal distinctiveness theory, Brewer, 1991). Yet, operationalizations of self-stereotyping, as outlined below, are very diverse. This large variety of measures seems to stretch the conceptual boundaries of what self-stereotyping may comprise.

The most global measures interpreted as self-stereotyping focus merely on the perception of self as being similar to, or being prototypical of the ingroup. An example of such measure could be an item stating: "I am similar to my group" (Simon et al., 1997; Simon, Pantaleo, & Mummendey, 1995; Spears et al., 1997; Tropp & Bianchi, 2003; Verkuyten & Nekuee, 1999, Leach et al., 2008). These measures do not tap into an *overlap* process. Therefore, they are also not suitable to capture *directionality* because in this case similarity between self and ingroup can neither stem from the personal (i.e., self-anchoring) nor from the social self (i.e., self-stereotyping; see Krueger et al., 2006 similar argument). Moreover, the global measures do not provide any information about the *content* on which the similarity or typicality is based. Therefore, these general similarity measures do not capture the process of defining the self in terms of prototypical ingroup characteristics, or "a cognitive redefinition of

self" (Turner et al., 1987, p. 66). Finally, it is unclear to what extent global similarity is the result of *informational* similarity (e.g., both me and my group are dog-lovers) or similarity in *valence*, (e.g., both me and my group are positive).

Self-descriptive measures of self-stereotyping. A second class of self-stereotyping measures comprises the description of the self in terms of stereotypical traits. Different from general similarity measures, self-descriptive measures are operationalized at the trait level and therefore incorporate the *content* criterion for proper measurement. The level of stereotyping is based on the self-typicality on a series of traits pre-tested as stereotypical of a given social category (e.g., Hogg & Turner, 1987; Simon & Hamilton, 1994; Onorato & Turner, 2004; Pickett et al., 2002). However, this type of measure does not tap into the emergence of self-ingroup *overlap,* because they include only a self-perception measure (i.e. how do I perceive myself?), but not a measure of group perception. In other words, this measure is merely self-descriptive and does not relate these self-descriptions to the participants' endorsement of group stereotypes. Therefore, it is unclear whether these self-descriptions are indeed in line with participants' conceptions of the ingroup (Latrofa et al, 2010; Otten & Epstude, 2006; van Veelen et al., 2011).

There is also an implicit variant of the self-descriptive measures of self-stereotyping, based on the speed and accuracy of associating the self with stereotypical ingroup characteristics (Cadinu & Galdi, 2012; Cadinu, Galdi, & Maass, 2012; Lorenzi-Cioldi, 1999; Onorato & Turner, 2004). Implicit response times are assessed with the Implicit Association Test (IAT; Greenwald et al., 1998). Similar to the explicit measures of self-descriptions, the attribution of stereotypical ingroup traits to the self incorporates the *content*, but not the *overlap* criterion. Hence, strictly speaking, without knowledge on the individual's endorsement of a group stereotype ("men are typically dominant"), the association of the self with a stereotypical trait ("dominant") could in principle also be inferred from the personal self ("I am typically a dominant person"). Finally, both implicit and explicit self-descriptive measures typically focus only on stereotypical traits (see for an exception, Pickett et al., 2002). Without including stereotype-irrelevant traits, this self-stereotyping measure remains uncontrolled for the variance that could potentially be explained by self-anchoring

Overlap measures of self-stereotyping and self-anchoring. The global similarity and self-descriptive measures of self-stereotyping discussed so far do not adhere to the *overlap* criterion. On the contrary, most measures to infer self-anchoring or self-

stereotyping do capture the overlap criterion between the self and the ingroup. The most global way to measure overlap between the self and the ingroup is, in our view, via the pictorial *inclusion of the ingroup in the self* measure (Tropp & Wright, 2001; Schubert & Otten, 2002). This measure, adapted from *the inclusion of other in self* scale by Aron, Aron, and Smolan (1992), is composed of a series of Venn-like diagrams, each of which is composed of two circles (one representing the self, and one representing the group) varying in their degree of overlap. This visual representation of the self relative to the ingroup captures the essence of self-ingroup *overlap* in a very clear and unobtrusive manner. Importantly however, this measure merely captures global overlap between the self and the ingroup and not, as Tropp and Wright (2001) claim, a self-stereotyping process. The *content*, *directionality* and *valence* criteria are not part of this measure. Hence, also in this case general similarity with the group is over-interpreted as the unidirectional assimilation to group prototypes, whereas in fact, this measure may represent generically either a self-stereotyping process or a self-anchoring process, or both.

Implicit trait-overlap measures. In contrast to pictorial measures, most other measures of self-group overlap are operationalized at the trait level and provide overlap scores based on the strength of association between self-reported traits' applicability to the self and the group. At the implicit level, such overlap measure is generally based on response times for self-ratings regarding a series of traits that either match or mismatch prior group-ratings (Smith & Henry, 1996). Originating as a measure of the associative strength of self-*partner* associations (Aron, Aron, Tudor, & Nelson, 1991) Smith and Henry (1996) further developed this measure to capture self-*ingroup* associations. In their studies, Smith and colleagues (Coats et al., 1999; Smith & Henry, 1996; Smith, Coats & Walling, 1999) asked their participants to fill out a paper-and-pencil questionnaire rating an ingroup on several traits (both positive and negative) on a 7-point scale. These traits were not defined in terms of their stereotype relevance or irrelevance. Later, using a response time task on the computer, participants were asked to indicate whether the same traits applied to themselves (yes/no). All paper-and-pencil group-ratings were dichotomized for their applicability to the group (1-3 = yes; 5-7 = no). Results showed that self-judgments (yes/no) were made faster when trait ratings matched ingroup ratings on the prior rating task.

Smith and colleagues interpreted this finding as a self-stereotyping process, with the ingroup becoming part of the self-image (Smith & Henry, 1996; Smith et al, 1999; Coats et al., 1999). However, this conclusion should be treated with some

caution. First, although their response time paradigm tapped into *overlap*, the *content* of the traits (stereotype relevant or irrelevant) of self-ingroup overlap was not taken into account. Secondly, the self-group overlap was measured *unidirectionally*, with prior ingroup ratings determining subsequent response times on the self, whereas the reversed option, that prior self-ratings could also determine subsequent response times on the ingroup, was not tested. Based on this, a possible self-anchoring effect cannot be ruled out in the research designs by Smith and colleagues. Thus, it is not possible to ascribe the findings to a self-stereotyping process unequivocally.

To address this point, Cadinu and De Amicis (1999) included an additional condition to the reaction time paradigm, measuring reaction times not only for self, but also for the matching and mismatching *ingroup* ratings, in relation to previously measured self-ratings. Results showed that both response times on the self and the ingroup were faster for matching traits compared to mismatching traits, even though the two tasks were performed one-day apart, and the order of the tasks was counterbalaneced. Hence, the authors concluded that the emergence of overlap between the self and an ingroup representation is *bi-directional*; people seem to be equally able and willing to infer information from the self to the ingroup as well as from the ingroup to the self. This formed the first indirect evidence for the co-existence of self-anchoring and self-stereotyping as two means to create self-group overlap. Recently, the results by Cadinu and De Amicis (1999) were further corroborated by Cho and Knowles (2012), and Machunsky and Meiser (2009). Taken together, the application of Smith's reaction time paradigm to self-ingroup overlap signals that equal emphasis should be placed on both directional routes to self-ingroup overlap. Nonetheless, a methodological distinction between self-anchoring and self-stereotyping could not entirely be achieved, because none of these studies fully took into account the *content* (stereotype-relevance versus irrelevance) of the traits. Yet, as will be further elaborated below, Smith's RT paradigm represented the key research paradigm to disentangle self-anchoring from self-stereotyping in one (see section: Disentangling self-anchoring and self-stereotyping: an implicit method)

Explicit trait overlap measures. Explicit overlap scores between trait ratings regarding the self and the ingroup are the most frequently used method to operationalize social inference processes. Generally, they are calculated either based on the mean squared distance scores ($d^2 = \frac{\Sigma(\text{self-group})^2}{\text{Ntraits}}$) or by calculating intra-

individual profile correlations[5] ($r_{self.group}$), the latter varying between -1 (negative association between self and group) and + 1 (positive association between self and group]. Although both distance scores and profile correlations are satisfactory ways to measure self-ingroup overlap, one should be aware of some differences. First, in contrast to profile correlations, squared distance scores are not normally distributed; squaring distances makes the score exponentially larger when differences between self and group ratings increase (see Figure 7.1). Hence, testing these scales in traditional regression analysis may be unreliable, as the assumption of normality is violated (Moore & McCabe, 1989). A solution to this first problem is to log-transform the scores. Secondly, when using a distance score, it is more difficult to control for valence or social desirability of traits whereas profile correlations do allow for such control (see also De La Haye, 2000; Krueger, 1998a). Therefore, based on the advantages of profile correlations, it is not surprising that they are used more frequently in the literature than squared distance scores.

The way explicit trait level self-ingroup overlap scores can be used as measures of self-anchoring and self-stereotyping varies according to the group context. Specifically, the applicability of the content criterion to self-anchoring and self-stereotyping measures differs between minimal and real groups. Below, we will therefore discuss these measures for minimal and real group contexts separately (see also Table 7.1)

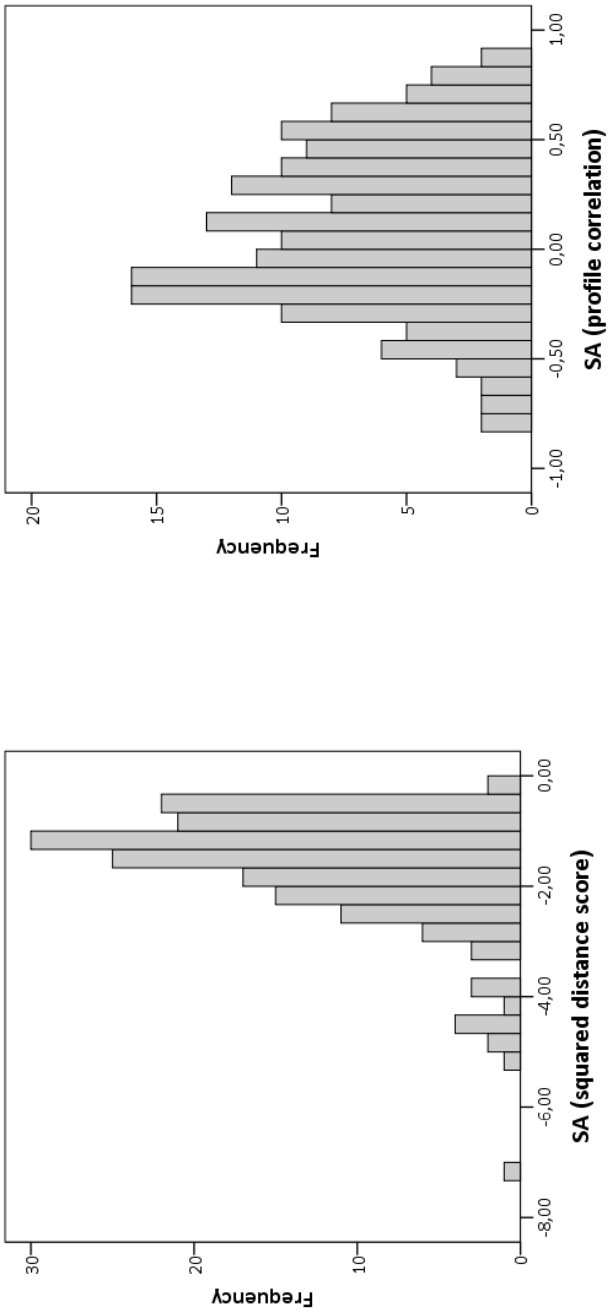

Figure 7.1:
Distribution of self-anchoring measures based on squared distance scores (left panel) and profile correlations (right panel) within the same dataset (Van Veelen, Otten & Hansen, 2010; Study 1)

Self-anchoring and self-stereotyping trait-level overlap measures in minimal groups. In *minimal* groups, providing unobtrusive evidence for self-anchoring based on trait-level overlap scores is relatively easy. Typically no group stereotypes are available in the MGP, and therefore, a self-ingroup overlap score on trait ratings can be unambiguously interpreted as stemming from the personal self (Cadinu & Rothbart, 1996; Otten & Wentura, 2001; Otten & Bar-Tal, 2002). Consequently, when self-anchoring is measured in minimal groups, the criterion of *content* (stereotype relevant vs. irrelevant) does no longer form a crucial precondition to reliably interpret general self-ingroup overlap as unidirectionally stemming from a self-anchoring process (Clement & Krueger, 2000, Study 1; 2002; Didonato et al., 2011; Krueger & Clement, 1996; Otten & Wentura, 2001; see also Table 1). However, one criterion that should be carefully considered is the impact of valence. Indeed, using the self as a source of *information* or as a source of *evaluation* to make inferences about a minimal group are two distinct processes (Gramzow et al., 2001; Gramzow & Gaertner, 2005). To our knowledge, researchers investigating self-anchoring in minimal groups have generally taken valence into account, either by implementing valence of traits as a factor in their research design (e.g., Cadinu & Rothbart, 1996; Otten & Wentura, 2001) or by statistically controlling for valence effects in trait ratings (e.g., Clement & Krueger, 2002; Krueger & Clement, 1996, van Veelen et al., 2012a).

Measuring self-stereotyping in minimal groups would require a manipulation providing information on ingroup stereotypes, which are typically absent in minimal groups. In other words, in minimal groups *content* needs to be provided on ingroup stereotypes to allow the researcher to measure the level of assimilation of the self to such ingroup stereotypes. However, experimentally providing ingroup information to participants should almost necessarily result in ingroup stereotypes that are less richly represented than self-knowledge. Thus, to balance the informational richness between the two experimental conditions, researchers would need to ensure that only novel (i.e., non-words) information about the self and the ingroup is provided (see Cadinu & Rothbart, 1996 for this procedure).

Self-stereotyping trait-level overlap measures in real groups. In contrast to minimal groups, in real groups there are two sources of information available to infer similarity between the self and the ingroup, namely (1) the group stereotypes and (2) the personal self. Therefore, measuring self-anchoring and self-stereotyping in real groups based on self-ingroup overlap requires taking into account the available *content*

of both the group and the self. Below, we will first focus on self-stereotyping in real groups and subsequently on self-anchoring.

Generally, scholars using trait-level overlap scores to measure *self-stereotyping* have taken into account the *content* criterion, as they all focus on stereotype-relevant traits (Biernat et al., 1996; Cadinu et al., 2012; Eidelman & Silvia, 2010; Guimond et al., 2006; Latrofa et al., 2009; 2010; Ryan & Bogart, 1997; 2001). Yet not all studies have also taken into account stereotype-irrelevant traits, which allow discriminating self-stereotyping from self-anchoring effects. Consequently, the impact of self-stereotyping may have been overestimated. As a case in point, Ryan and Bogart (1997; 2001) measured self-stereotyping based on both positive and negative (*valence*), stereotypical (*content*) traits that were rated first for the ingroup and then for the self (*order; directionality*). Hence, criteria for proper self-stereotyping measurement were fulfilled. Yet the associative strength ascribed to the self-stereotyping process remains uncontrolled for potential self-anchoring effects, because a measure of self-ingroup overlap on stereotype-irrelevant traits was not included.

In other studies on self-stereotyping, both stereotype-relevant and irrelevant traits were taken into account, yet there are irregularities with respect to (1) the content criterion, because the unbalanced number of stereotype-irrelevant traits included relative to the number of stereotype-relevant ones, and also with respect to (2) the directionality criterion (see also Table 1). To illustrate the first point, several self-stereotyping researchers have included both stereotype-relevant and stereotype-irrelevant traits, in order to assess the impact of self-stereotyping, while controlling for self-anchoring (Biernat et al., 1996; Latrofa et al., 2009) and concluded from their study results that self-stereotyping plays a more important role than self-anchoring. Yet the number of stereotype-irrelevant traits in these studies is disproportionally smaller than the number of stereotype-relevant traits, causing an imbalance in the predictive power between both processes.

Secondly, concerning directionality, often times self-stereotyping researchers, who take into account both stereotype-relevant and-irrelevant traits, do not reverse the order of self and ingroup ratings for the two different types of traits, but measure ratings uni-directionally: either only in the 'ingroup → self' direction (Biernat et al., 1996) or only in the 'self→ ingroup' direction (Latrofa et al., 2009; Eidelman & Silvia, 2010; see also Table 1). The result is that in the first case self-anchoring is not properly measured, whereas in the second case, self-stereotyping is not properly measured, because the sequence of measurement favors one process over the other.

For example, Guimond and collaborators (2006), varied the order of ingroup and self-ratings in order to include both directional routes to self-group overlap, but they did so based only on stereotypical traits, also not controlling for valence. Furthermore, even though for half of the participants' self-ratings were measured prior to the group ratings, the group context was always salient during all trait ratings, which may have already affected personal self-ratings due to the activated social identity[6] (see Riketta & Sacramento, 2008; van Veelen et al., 2011, for a similar argument). Thus, their conclusion that self-anchoring had no relevant role in self-ingroup relations as compared to self-stereotyping may be somewhat overstated, considering the methodological constraints on directionality and valence, and content-related limitations in the measurement.

Only recently the unique impact of self-stereotyping, while controlling for possible self-anchoring effects, was demonstrated in a longitudinal experiment (Latrofa et al., 2010). An equal amount of stereotype-relevant and irrelevant traits was used (both positive and negative) to measure their applicability to the self and to the ingroup. At Time 1 half of the participants rated the self, and the other half rated the ingroup on all the traits. The reverse was done at Time 2. Results showed that self-ingroup overlap was strongest on stereotype-relevant traits, when group ratings were measured prior to self-ratings. Overall, Latrofa et al. (2010) took into account overlap, directionality (i.e., order of self-group ratings), valence, and content of the traits (i.e., stereotype-relevant and -irrelevant) simultaneously, and, as predicted, found clear evidence for self-stereotyping above and beyond self-anchoring.

Self-anchoring trait-level overlap measures in real groups. In real groups, providing distinct evidence for *self-anchoring* is just as challenging as providing evidence for self-stereotyping. As shown in Table 7.1, there are several scholars who measured self-anchoring in real groups, reporting overlap scores between self and group, yet not fulfilling the directionality and valence criterion (Bianchi, Machunsky & Mummendey, 2009), or the content criterion (Ames, 2004a; Krueger & Clement, 1996; Krueger & Stanke, 2001). To illustrate the latter, Krueger and Stanke (2001) measured self-anchoring using the social category of 'students'. Their self-anchoring score was based on a general trait list, without pilot testing whether these traits were stereotype-irrelevant for the social category 'students'. Examples of the employed traits were 'lazy', 'individualistic' and 'neat'. It is conceivable that some of these traits can be considered as stereotypical or counter-stereotypical of students. Hence, part of what is interpreted as self-anchoring in this study may in fact stem from the assimilation of

the self to stereotypical group characteristics. A different illustration of a self-anchoring score disregarding the content criterion can be found in the first Study of a paper by Ames (2004a). While stereotype-irrelevant traits were rated regarding their applicability to the self prior to ingroup ratings, the social context (i.e., Colombia University studies) was made salient prior to the self-ratings. Consequently, the content of personal self-ratings may already have been contaminated by the activated social identity (Latrofa et al., 2010; Riketta & Sacramento, 2008; van Veelen et al., 2011). Hence, these two examples illustrate a potential overestimation of the variance explained by self-anchoring, because the content criterion was not taken into account.

Van Veelen, Otten and Hansen (2010) also measured self-anchoring in a real group, using the Dutch national category as their social target, and aiming at taking into account all four criteria of proper self-anchoring measurement. The authors included only traits that were - based on a pilot study - stereotype-irrelevant in terms of their content and neutral in terms of their valence. Participants rated the applicability of these traits to the self *prior* to making the social category salient, so that self-ratings could not be contaminated by an already activated social identity. Subsequently, participants rated the group along the same traits. The profile correlations of self-anchoring yielded a significantly positive association between the self and the ingroup based on the projection of personal traits to the ingroup. Yet, this self-anchoring effect was not controlled for by self-stereotyping. Thus, the question remains whether self-anchoring would still contribute significantly to self-group overlap in this study had participants also been given the opportunity to self-stereotype.

Disentangling self-anchoring and self-stereotyping: an implicit method. The first scholars to provide evidence for self-anchoring in real groups, while testing the effects of self-stereotyping simultaneously were Otten and Epstude (2006). Their research design was based on the implicit reaction time paradigm by Smith and colleagues described above. Following Cadinu and De Amicis (1999), Otten and Epstude (2006) argued that in well-established groups, self-ingroup overlap can be attained bi-directionally. However, in addition to directionality, the authors argued that the *content* of information for self-group inferences (i.e., ingroup prototypes or the personal self) should also be controlled for. To this end, instead of focusing only on traits that were clearly defined for the ingroup or the self on the basis of a prior paper-and-pencil task (i.e., traits rated as 1-3 or 5-7 on applicability on a 7-point scale), Otten and Epstude used also the ambiguous midpoint of the scale (i.e., traits rated as 4 on

applicability).

To assess self-anchoring, Otten and Epstude (2006) started from a total of 90 trait ratings on self and a real social category, namely gender (male/female). They considered only those traits that, on the paper-and-pencil task, were ambiguously defined for the ingroup (4) and clearly defined for the self (1-3 and 5-7). The question was whether participants forced to make a dichotomous choice (yes/no) on a formerly rated ambiguous trait about the ingroup, would rely on the self-rating to infer the applicability to the ingroup. Analyses of dichotomous ingroup ratings (yes/no) based on a reaction time task showed evidence for the match/mismatch effect: Response times on ingroup ratings were made faster for ambiguously defined group traits, if they matched the prior self-ratings.

To asses self-stereotyping, traits ambiguously defined for the self, yet clearly defined for the group, were used to conduct response time analysis on subsequent dichotomous (yes/no) self-ratings Yet, no significant evidence was found that response times were faster for ambiguously defined self-ratings if they matched prior group ratings. Hence, Otten and Epstude (2006) found evidence for a prevalence of self-anchoring over self-stereotyping.

Using the same reaction time paradigm, van Veelen and Otten (2008) replicated the match/mismatch effect not only for self-anchoring but also for self-stereotyping on a different social category, namely psychology students (but notice that self-stereotyping was again less strong than self-anchoring; see Figure 7.2).

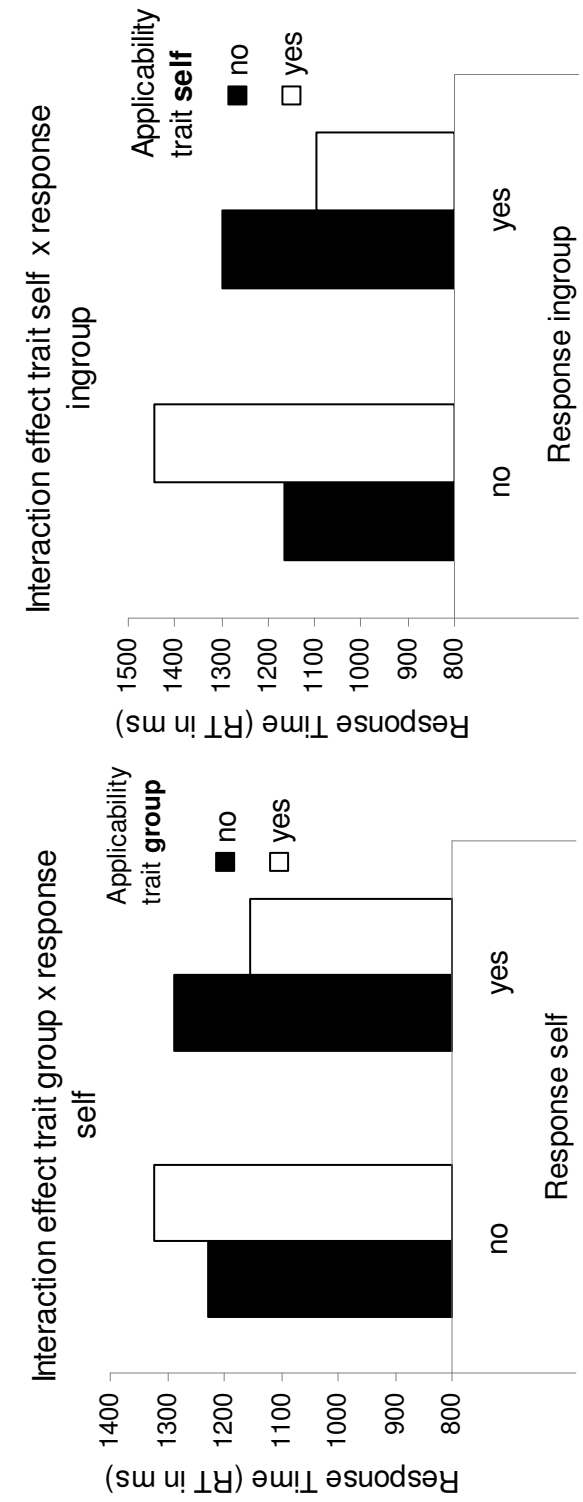

Figure 7.2:
Response time evidence for self-anchoring and self-stereotyping (Van Veelen & Otten, 2008). Left panel: Evidence for self-stereotyping: Interaction effect of Trait ratings group (yes/no) x Response self (yes/no) on ill-defined self traits, $F(1,640) = 3.01$, $p < .10$, $\eta^2 = .03$. Right panel: Evidence for self-anchoring: Interaction effect of Trait ratings self (yes/no) x Response ingroup (yes/no) on ill-defined group traits, $F(1,501) = 13.59$, $p < .001$, $\eta^2 = .03$.

In sum, the reaction time paradigm by Otten and Epstude (2006) has shown to be quite valuable as an implicit measure to disentangle self-anchoring from self-stereotyping, while the four measurement criteria can be met. In terms of the content criterion, the advantage of this methodological approach is that participants determine themselves what is stereotype-relevant or irrelevant. At the same time, there is also reason for some critique of this trait-selection procedure (see Cho & Knowles, 2012). Amongst others, Cho and Knowles state that a disadvantage of the paradigm by Otten and Epstude (2006) is that all traits rated as ambiguously defined for the source of inference and clearly defined for the target of inference are excluded from analyses. This leads to a substantial loss in observations and thus an overall loss in statistical power.

This loss in observations also has consequences for the inferential status of the ingroup relative to the self. Specifically, the self is a much richer source of information compared to a group (e.g., Krueger, 2007). Consequently, because people are free to indicate their own stereotype-relevant and irrelevant traits, the number of traits available to infer a self-stereotyping process was always smaller than the number of traits available to infer a self-anchoring process (Otten & Epstude, 2006; van Veelen & Otten, 2008). Importantly, this power difference may explain why evidence for a self-anchoring effect is stronger compared to self-stereotyping in these studies. Yet, as argued by van Veelen et al. (2011), the fact that the self is more accessible and conceptually richer compared to group-representations, thus leading to stronger response time evidence, does not necessarily imply that self-stereotyping does not occur to a similar extent. In our view, it merely signals that group-knowledge may be activated via more elaborated processing.

All in all, further refinement of the RT paradigm to obtain more control over both the *number* and the *content* of traits (e.g., including pilot-tested stereotype-relevant traits) should result in a more balanced measure for both constructs, possibly leading to 'equal opportunities' for self-anchoring and self-stereotyping. Next, we will focus on an explicit method to disentangle self-anchoring and self-stereotyping.

Disentangling self-anchoring and self-stereotyping: An explicit method. Recently, self-anchoring and self-stereotyping were successfully disentangled based on explicit overlap measures (Van Veelen et al., 2011; 2012a), also meeting all four measurement criteria. Prior to the main study, a large number of traits were pilot tested for their stereotype-relevance or irrelevance in relation to the social category used in the study (i.e. psychology students; the Dutch). An equal amount of

stereotype-relevant and irrelevant traits was selected for the main study. Also, traits were pre-tested for being neutral in terms of valence. In the main studies, the self was rated on stereotype-irrelevant traits, prior to making the ingroup context salient (self-ratings1: stereotype-irrelevant traits). Subsequently, both stereotype-relevant and irrelevant traits were rated for their applicability to the ingroup (group ratings = all traits). After ingroup ratings, the self was rated again, this time only on the stereotype-relevant traits (self-ratings2: stereotype-relevant traits). A self-anchoring score was then calculated based on the overlap between self and ingroup ratings on stereotype-irrelevant traits. In addition, a self-stereotyping score was calculated based on the overlap between group and self-ratings on stereotype-relevant traits. In these studies, first unobtrusive evidence was found that when measuring self-anchoring and self-stereotyping simultaneously within-participants, the associative strength of self-ingroup overlap was equally strong for both processes, which also correlated positively with each other (van Veelen et al., 2011, Study 2; Van Veelen et al., 2012a, Study 2).

Conclusion: Reviewing self-stereotyping and self-anchoring measures.

To sum up, measurement criteria allow us to evaluate operationalizations of self-anchoring and self-stereotyping, and clarify prior inconsistences in their relative importance. A careful investigation of the numerous empirical demonstrations of self-stereotyping and self-anchoring reveals that only a few fulfill all four measurement criteria simultaneously (construct validity). Moreover, because self-stereotyping and self-anchoring have been measured mostly in isolation from each other (see Table 1) the variance in self-ingroup overlap explained by one inference process is often not controlled for by the other (discriminant validity). Consequently, contrasting evidence about self-group overlap as pre-dominantly stemming from either self-anchoring or self-stereotyping may be attributed to incomplete fulfillment of the requirement of overlap, directionality, valence and content criteria in the operationalization of the measures (self-stereotyping dominance: Biernat et al., 1996; Guimond et al., 1996; Latrofa et al., 2009; self-anchoring dominance: Clement & Krueger, 2002; Krueger & Stanke, 2001).

Overall, the measurement criteria provide a methodological tool to measure and compare self-anchoring and self-stereotyping adequately in one research paradigm. We discussed two research paradigms demonstrating that self-anchoring and self-stereotyping can be methodologically disentangled in real groups, while taking into account all four methodological criteria. Specifically, both an implicit paradigm (Otten & Epstude, 2006) and an explicit paradigm (van Veelen et al. , 2011; 2012a)

allow for simultaneous measurement of self-anchoring and self-stereotyping simultaneously and hence to investigate their distinct impact on in(ter) group phenomena.

However, there is an important advantage to the explicit method compared to the implicit one which is highly relevant for the purposes of this review, namely to provide a model demonstrating the link between self-anchoring, self-stereotyping and social identification: With the implicit RT paradigm, aside from the earlier discussed issue of loss large variation in the number of usable stereotype-relevant and irrelevant traits per participant, a second complication is that response time (RT) data at the trait-level are generally not easily related to explicit variables measured at the individual level [see also Nosek (2007), and Rydell and McConnell, (2010) for recent reviews on incoherence between implicit and explicit measures]. Indeed, first attempts to explicitly link both self-anchoring and self-stereotyping based on RT data, to an explicit measure of identification revealed no effects (van Veelen & Otten, 2008). Given that social identification scores are typically based on explicit self-report measures[7], comparable explicit measures of self-anchoring and self-stereotyping have been shown to be more applicable when investigating their relation with social identification (e.g., van Veelen et al., 2011; Latrofa et al., 2010).

In sum, we can conclude that self-anchoring and self-stereotyping can be distinguished from each other, both conceptually *and* empirically. Moreover, an explicit method to distinguish them appears to be more suitable to assess their relationship with commonly used explicit measures of social identification. Accordingly, we can go beyond reviewing past literature and focus on an integrated model of both processes as two cognitive pathways to social identification.

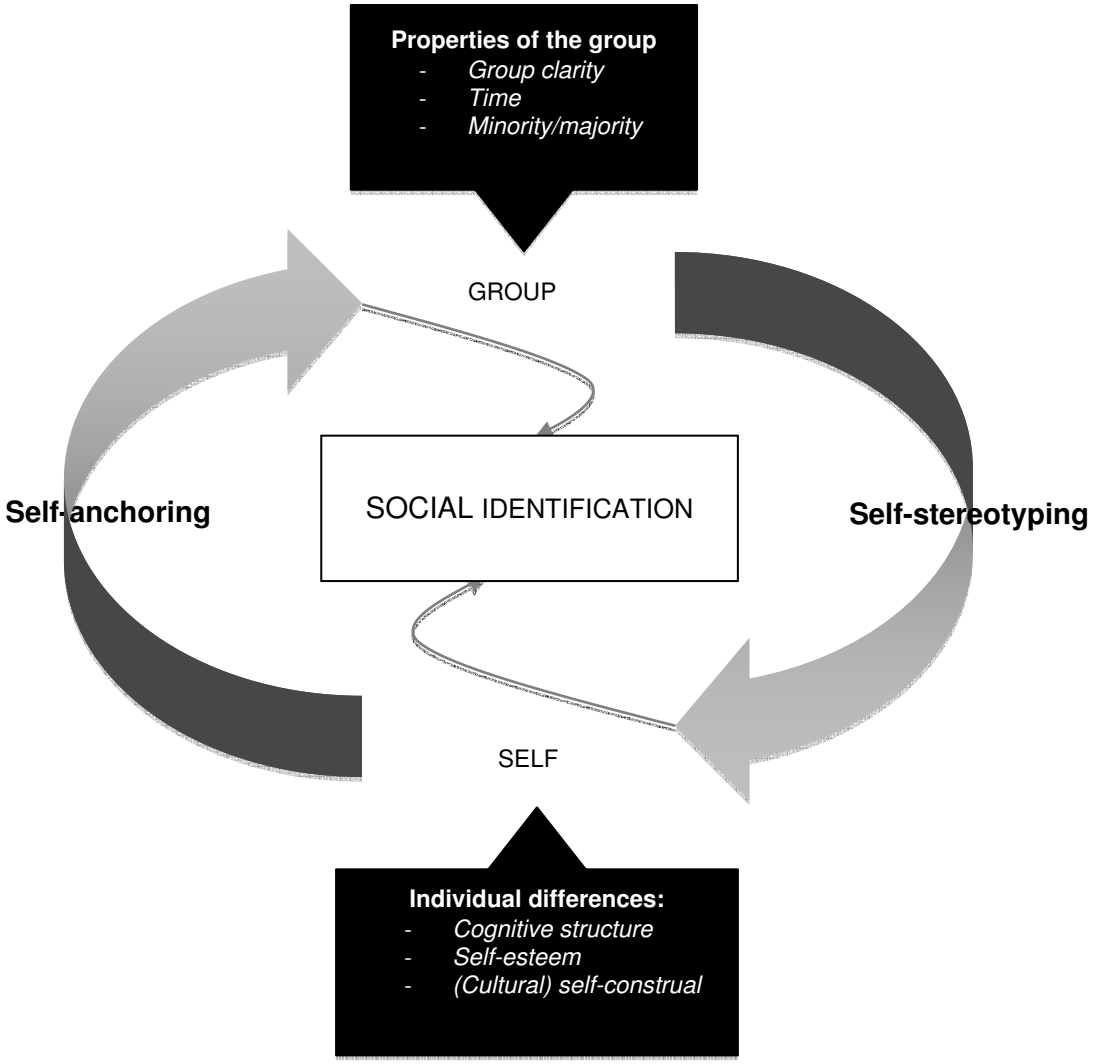

Figure 7. 3:
Cognitive dual pathway model to group identification. Upper panel: basic model; lower panel: model including context and individual factors.

Figure 7.3 shows the cognitive dual-pathway model of social identification. In this model, the basic premise is that there are two cognitive routes to social identification, namely via self-anchoring and self-stereotyping. This implies that self-ingroup overlap based on both the personal self (i.e., self-anchoring) and the social self (i.e., self-stereotyping) is assumed to instigate people's level of social identification.

Importantly, this viewpoint does not imply a *static model* in the sense that the relevance of self-anchoring and self-stereotyping, and the proportion of variance in social identification that is predicted by these processes, is fixed. Even after a thorough methodological review, we cannot attribute all the differences in the empirical evidence on the relative impact of self-anchoring and self-stereotyping to methodological inconsistencies. For example, Latrofa et al. (2010) found evidence for the higher prevalence of self-stereotyping, Cadinu and Rothbart, (1996) found evidence for the higher prevalence of self-anchoring and van Veelen et al. (2011) found evidence for an equal impact of both processes even though these three studies were comparable in considering the relevant measurement criteria. Therefore, we argue that these ostensibly contradicting findings can be explained by taking a *dynamic* approach to the role of self-anchoring and self-stereotyping in social identification, depending on a series of variables. Specifically, we introduce a number of factors relevant to *properties of the group context* and to *individual differences* in our model that are expected to moderate the relative impact of self-anchoring and self-stereotyping on social identification with ingroups (see Figure 7.3). This may answer the question of how different people, in different group settings, will identify via different cognitive pathways.

It is important to note that in our model we presume a causal sequence, such that self-anchoring and self-stereotyping are considered cognitive predictors and social identification is considered an outcome variable. Such sequence fits to cognitive appraisal theories also proposing a "first-cognition-then-affect" sequence to explain emotional responses (Frijda, Kuipers, & ter Schure, 1989; Smith & Ellsworth, 1985). Such reasoning fits quite well with the self-anchoring literature, in which scholars have mainly focused on new or minimal groups. Here, the self-anchoring - social identification sequence seems most plausible, because the self forms the only source of inference to provide content to a relatively unknown ingroup identity, and to subsequently explain ingroup favoritism (e.g. Cadinu & Rothbart, 1996; Otten & Wentura, 2001). Based on this premise, we assume that self-stereotyping can also function as a predictor of social identification. Indeed, in a recent longitudinal study, evidence was obtained that self-stereotyping predicted social identification, but not

vice versa (van Veelen, Hansen, & Otten, 2013a).

However, we do not wish to imply that a reversed causal chain is not possible. In fact, social identity researchers have shown that in a situation in which an ingroup identity is highly salient, high identifiers are particularly motivated to self-define in terms of ingroup stereotypes (Haslam, Oakes, Reynolds, & Turner, 1999; Turner et al., 1987; Spears et al., 1997). We acknowledge that such situational salience of an ingroup's identity can enhance the tendency to self-define as a stereotypical ingroup member. Moreover, with respect to self-anchoring in real groups, high identifiers may also be more inclined to project personal characteristics onto the ingroup. Therefore, although in our model we argue that self-anchoring and self-stereotyping form cognitive explanations for social identification, we do not rule out the option that the reverse is possible too. In this respect, the relationship between social inference processes (i.e., self-anchoring and self-stereotyping) and social identification could even be circular sometimes, such that cognitive processes strengthen affective bonds and vice versa.

Below we will provide empirical evidence for the various paths within our model. First, we will discuss studies demonstrating the link between self-anchoring, self-stereotyping and social identification. Subsequently we will provide recent and preliminary evidence for the moderators proposed in our model.

The self-stereotyping–social identification link

Following SCT principles, social identification emerges solely via the social self, or the assimilation to the ingroup prototype. The personal self has no relevant role to play in identification with an ingroup, because as an ingroup becomes salient, the activation of the social self automatically pushes the personal self to the background (e.g., Tajfel & Turner, 1979; Turner et al., 1987; 1994). Based on this premise, classic theories on social identity processes e.g., Uncertainty Reduction Model (URM; Hogg, 2007) and Optimal Distinctiveness Theory (ODT; Brewer, 1991) generally assume that self-stereotyping is *the* cognitive mechanism associated with social identification. Remarkably however, unobtrusive empirical evidence for the self-stereotyping–social identification link is scarce.

For example, the URM (Hogg, 2000; 2007) states that people identify with groups to reduce uncertainty about the self, via the *assimilation to ingroup prototypes*. Yet, the mediating role of self-stereotyping in causing social identification strongly implied

in this model has – to our knowledge - not been empirically tested. Similarly, Optimal Distinctiveness Theory (ODT; Brewer, 1991) assumes that people's need to belong instigates the assimilation of the self to a group's prototype, which results in social identification (e.g., Leonardelli, Pickett & Brewer, 2010). Indeed, research on this premise has shown that a manipulation of the need to belong leads to stronger self-stereotyping compared to a control condition (Brewer & Pickett, 1999; Pickett et al., 2002), only among those who highly identified initially. But apart from being a moderator, to our knowledge social identification was not investigated as an end result of such need satisfaction, based on self-stereotyping principles.

Furthermore, some empirical studies investigating the self-stereotyping−social identification link have focused on the relation between general indicators of similarity with the group (as proxy for self-stereotyping), and social identification (Spears et al, 1997; Verkuyten & Nekuee, 1999). Importantly, based on the discussion on measurement criteria above, we should interpret this evidence with some caution, because a global similarity measure does not specifically tap into the unidirectional process of self-stereotyping. In our view, the process of self-stereotyping is more *specific* than "similarity to the ingroup", and social identification something *more comprehensive* than "similarity to the ingroup". Self-stereotyping refers to the specific *process* to create a relationship between the self and the ingroup based on assimilation to ingroup stereotypes, while social identification refers to a *state-of-mind*, reflecting the affective significance one attaches to one's group membership (Postmes et al., 2012; Cadinu et al., 2012). Importantly, this distinction allows us to assume that social identification with an ingroup does not merely result from the cognitive assimilation to group prototypes (e.g., Tajfel, 1972; Hogg, 2000; Brewer, 1991), but that it can also be attained based on other factors, such as the impact of the *personal self* on a group's representation (i.e., self-anchoring).

The first recent empirical evidence corroborating the link between self-stereotyping and identification, while making the clear methodological and conceptual distinction between the two processes, was provided by Latrofa and colleagues. In several studies they measured self-stereotyping among low status groups (i.e., Southern Italians; Latrofa et al, 2009; women: Cadinu et al., 2012; Latrofa et al., 2010) and found a significant relation with social identification[8]. Specifically, self-stereotyping was measured based on self-ingroup overlap inferred from stereotypical group traits, controlling for valence.

The self-anchoring–social identification link

The first empirical evidence on the self-anchoring−social identification link is also recent. In two studies using real groups (Dutch national identity: van Veelen et al., 2010; Study 1: Psychology students: Van Veelen et al., 2011) van Veelen and colleagues showed that people who strongly project personal attributes to the ingroup (controlling for valence) display strong levels of identification with the ingroup. Importantly, this corroborates the view that in real groups, for which knowledge on group stereotypes is in principle available; the personal self does play a central role in shaping a bond with the group, and does not necessarily depersonalize to attain a bond with the ingroup.

However, these studies did not include a measure of self-stereotyping. Hence, the question remains: If individuals were given the opportunity to self-stereotype in real groups, would self-anchoring still significantly contribute to the level of social identification? If not, this would be supportive of the functional antagonism between social and personal self, whereby conformity to group prototypes should automatically de-emphasize the role of the personal self in social identification (Turner et al., 1987; Brown & Turner, 1981; Mullen, Migdal, & Rozell, 2003). Yet in contrast to this assertion, a recent study measured self-anchoring and self-stereotyping simultaneously, taking into account the criteria for proper measurement, and found not only a significantly positive association between self and group trait ratings of equal magnitude for the two processes (self-anchoring $r = .24$; self-stereotyping $r = .27$), but importantly each of them predicted a unique proportion of variance in the level of social identification (van Veelen et al., 2011; Study 2). These findings delineate that the personal self does not necessarily need to fade into the background when identifying with an ingroup. In fact, when shaping a group bond, both the relevance of ingroup prototypes and the relevance of personal characteristics should be taken into account (van Veelen et al., 2011).

Together, this empirical evidence on the links between self-anchoring, self-stereotyping and social identification provide clear support for our proposed Cognitive Dual-pathway Model to Social Identification, in which both self-anchoring and self-stereotyping form cognitive paths towards social identification (see Figure 7.3). In essence, this means that in contrast to earlier assumptions of SIT and SCT (e.g., Tajfel & Turner, 1979; Turner et al., 1987; Brown & Turner, 1981; Mullen et al., 2003), the personal self plays an important role in the process of identifying with groups: it shapes a mental bond with our ingroups and it can complement the social

self in this process. Hence, instead of perceiving the social and the personal self as functionally antagonistic processes, existing at opposite ends of one continuum, we demonstrate that the social and the personal self may exist on two separate continua and work together as two distinct sources of inference to create mental overlap and to identify with the group.

This theoretical proposition on the relevance of the personal self in social identification is supported by recent work on the central role of the individual self in small interactive groups with individualistic group norms (Jans, Postmes, & van der Zee, 2012; Jetten, Postmes, & McAuliffe, 2002; Postmes, Spears, Lee, & Novak, 2005). However, different from this research, the present model provides a basic, cognitive account for *how* the dynamic between the social and the personal self operates in shaping a mental bond with any kind of social category that one considers to be an ingroup.

In the study by van Veelen et al. (2011) described above, both self-anchoring and self-stereotyping were equally predictive of identification with the group of 'psychology students'. Yet, it is quite plausible that the relative predictive power of self-anchoring and self-stereotyping on identification is not always the same in all situations. Rather, the interplay between the two cognitive routes to identification is expected to be dynamic; which cognitive route is most predictive of social identification may depend on the *properties of the group contex* and the *type of person*. Such dynamic approach should also be able to reconcile the differences in the level of self-anchoring and self-stereotyping found in earlier studies, not accounted for by methodological constraints (higher self-stereotyping: Latrofa et al., 2010; higher self-anchoring: Cadinu & Rothbart, 1996; equal levels: van Veelen et al., 2011). To this end, we integrate several moderators in our dual-pathway model, aiming to underpin the dynamic role of self-anchoring and self-stereotyping in social identification.

Moderators in the dual-pathway model

In this section, we will discuss recent empirical evidence demonstrating several factors that moderate the relative impact of self-anchoring and self-stereotyping on social identification. This may provide insight in the applied relevance of the cognitive dual-pathway model, and hence advances our understanding of how different people identify with different groups. We will focus on how *properties of the group context* and *individual difference* variables moderate the relative impact of the two

cognitive routes on social identification. Specifically, we discuss the moderating role of (a) *group clarity* (b) *time*, or duration of group membership, and (c) *minority versus majority status* in social identification processes. Moreover we will discuss some *individual differences* in relation to self-anchoring and self-stereotyping and their implications for social identification, namely, the need for cognitive structure, self-esteem, and the (cultural) self-concept.

Properties of the group context. Imagine being a member of a Catholic Church choir. Try to think of three characteristics, likely to be stereotypical of such group. Now imagine being a member of a newly formed work team established to improve supermarket inventory. Again, try to think of three characteristics, likely to be stereotypical of such group. For the first group it is probably relatively easy to come up with stereotypes such as 'religious', 'musical' and 'conservative'. Yet for the second group, this is much harder, as it is mostly unclear what the consensually shared group stereotypes are in newly formed work teams. We argue that this difference in the *clarity of a group's identity content* largely determines the levels of self-stereotyping and self-anchoring as well as their predictive value for social identification. We define a group context as unclear if there is no clear-cut knowledge available about the meaning of its identity content, whereas a clearly defined group context provides unequivocal knowledge about its identity content (see also Machunsky, Meiser, & Mummendey, 2009; Waldzus, Mummendey, Wenzel, Weber, 2003).

Group clarity. In both the self-stereotyping and self-anchoring literature, there are indications that self-stereotyping plays a more important role in clearly defined groups, whereas self-anchoring does so in less clearly defined groups. Within the self-stereotyping domain, prior research has shown that a social category should be highly *salient* (Verkuyten & Nekuee, 1999), *meaningful* (Simon et al., 1997), and *important* (Pickett et al., 2002) in order for people to assimilate the self to the group prototype. Along this line, research has shown that for minority, or low-status, group members [(for whom their group membership is generally highly salient (McGuire & McGuire, 1988) and meaningful (Mullen, 1991; Simon & Hamilton, 1994)], prevalence of self-stereotyping is higher than for majority members (e.g., Cadinu et al, 2012; Latrofa et al., 2010; Spears et al., 1997).

In parallel, within the self-anchoring domain, a meta-analysis across 19 studies (Robbins & Krueger, 2005) showed that the projection of personal attributes onto the ingroup (i.e., self-anchoring) is significantly higher in minimal groups − in which a

group's identity is generally unclearly defined – as compared to real groups. Additionally, in recent research the clarity of a group's identity content was directly manipulated in both a minimal and a real group and subsequently the level of self-anchoring was measured. Results showed that with decreasing levels of group clarity, the level of self-anchoring increased across group conditions (van Veelen et al., 2012a; see Figure 7.4). Furthermore, Cadinu and Rothbart (2012) directly compared the level of self-anchoring and self-stereotyping in *real groups,* such as sorority students and left-handed people, and in *quasi-minimal groups*, based on the Zodiac system. The Zodiac system utilizes different qualities of astrology to show personalities of people born during a certain day and month. It can be considered real or fictitious depending on whether people attribute importance and meaning to it. For example, Betty the astrologist may perceive the Zodiac system as a real, existing entity and perceive certain characteristics from her Zodiac sign to be applicable to herself. In contrast, Rose the astronomer may find these Zodiac sign characteristics rather arbitrary and meaningless. Results of the studies by Cadinu and Rothbart (2012) consistently showed that in the real groups (e.g., sorority) self-stereotyping prevailed over self-anchoring. Yet in the quasi-minimal groups, Cadinu and Rothbart (2012) revealed that those who attributed meaning to the Zodiac system (the believers) reported equal levels of self-anchoring and self-stereotyping (comparable to the study results of van Veelen et al., 2011). Moreover, those who did not attribute meaning to the Zodiac system reported higher levels of self-anchoring, compared to self-stereotyping.

This latter finding is in line with results by Cadinu and Rothbart's initial studies (1996), in which they found a stronger prevalence of self-anchoring over self-stereotyping in minimal group conditions. From these findings, we may conclude that the ratio in explained variance of self-stereotyping relative to self-anchoring gradually increases as the content of an ingroup's identity shifts from meaningful and clear, to ambiguous and ill defined.

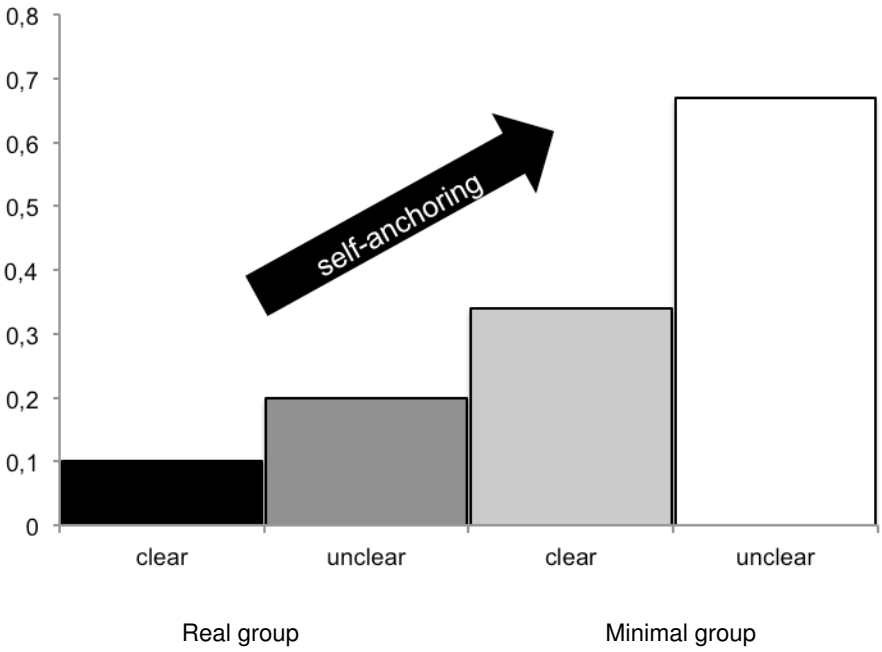

Figure 7.4:
Self-anchoring (profile *r*) as a function of group clarity across group contexts (van Veelen et al., 2012a; Study 1 and 2)

All in all, there is empirical support for the idea that the relative prevalence of self-anchoring versus self-stereotyping varies as a function of group clarity. Differences in group clarity may therefore explain contrasting study results on the relative prevalence of self-anchoring versus self-stereotyping that could not be accounted for by methodological issues: Self-stereotyping is generally higher than self-anchoring in studies conducted in well-defined, clear groups such as minority (e.g., left-handed; Cadinu & Rothbart, 2012) or low status groups (e.g., women; Latrofa et al., 2010), whereas the opposite occurs in studies conducted with unclear groups, such as minimal groups (Cadinu & Rothbart, 1996), or ill-defined national identities (van Veelen et al., 2012a). Moreover, among groups such as 'psychology students' both self-anchoring and self-stereotyping have been shown to be equally high (e.g., van Veelen et al., 2011), likely because these group contexts are neither clearly nor

unclearly defined: Group stereotypes are available, but there is also ample room to project personal characteristics onto the group.

Table 7.2:
Partial correlations (pr) between self-anchoring and group identification (controlled for self-stereotyping), and self-stereotyping and group identification (controlled for self-anchoring), separately for clear and unclear group

		Group identification	
		Unclear group	Clear group
Self-anchoring	*pr*	**.37***	-.18
Self-stereotyping	*pr*	.19	**.36***

Note: * *p <.01*
Retrieved from van Veelen, Otten & Hansen, 2012a

Having stated that the prevalence of self-anchoring and self-stereotyping varies as a function of group clarity, an additional step is required to find out whether group clarity also impacts on *how people identify* in different group contexts. If self-information is more diagnostic in unclearly defined groups, whereas group-information is more diagnostic in clearly defined groups, does this imply that identification with clear groups is most strongly predicted via self-stereotyping, whereas in unclear groups via self-anchoring. Recent research tackled this question by manipulating the clarity of a group context (clear versus unclear) to subsequently measure people's level of self-anchoring, self-stereotyping, and social identification. Results showed that self-anchoring was most strongly related to identification in the unclear group, but self-stereotyping was most strongly related to identification in the clear group (see Table 2; van Veelen et al., 2012a). Hence, the way in which we identify with groups is not the same in every group context. The predictive power of self-anchoring and self-stereotyping as cognitive paths to identification is inextricably linked to the clarity of a group's identity content.

Time. An important property of the group context showing relevant links with the clarity of a group's identity content is *time*. We expect that there may be longitudinal changes in the role of self-anchoring and self-stereotyping for social identification. Put differently, social identification may rely on different cognitive routes for new group members compared to full-fledged group members.

Remember Mark, the newcomer in an organization. As a new employee, one of his primary concerns is probably to get to know the organization and affiliate with his new colleagues (Tuckman, 1965). But how? For new group members, such as Mark, what it means to be a member of a new group is often quite unclear. There is still a lot to learn about the group, including its stereotypical characteristics and practices, and how its members are similar or different from other groups (Levine, Moreland, & Ryan, 1998). Consequently, new group members are often quite uncertain about what their new ingroup's identity comprises, and are motivated to reduce this uncertainty.

We expect that at an early stage of group membership, the scarcity of information about the group may lead newcomers to heavily rely on self-knowledge as a source of information to create a self-group bond and identify with it. We derive this reasoning from our prior discussion demonstrating that self-anchoring is more prevalent in ill-defined, minimal groups, compared to well-defined, real groups (Robbins & Krueger, 2005; van Veelen et al., 2012a). A similar suggestion was posed by Amiot, de la Sablonniere, Terry and Smith (2007), who developed a cognitive-developmental model on longitudinal changes in social identity formation and also proposed that the role of self-anchoring may be prevalent especially at the beginning of group membership.

At later stages of group membership, group members generally become more familiar with the group's norms and values. Indeed, research shows that a longitudinal increase in familiarity with the group leads to greater accuracy of group stereotype estimations (Judd, Ryan & Park, 1991; Ryan & Bogart, 2001). Therefore at this stage, the group likely becomes a meaningful entity and its typical characteristics can be integrated in the self. For Mark, our newcomer in the organization, this may imply that over time he can use not only self-knowledge (i.e., self-anchoring), but also group-knowledge (i.e., self-stereotyping) to infer a self-ingroup bond and identify with the organization.

Overall, the prior reasoning suggests that in the cognitive development of group membership over time, self-anchoring may play a more important role for identification at the beginning of group membership, whereas self-stereotyping may

do so later on, when accumulated knowledge on group stereotypes becomes more integrated into the self. Preliminary support for longitudinal changes in the impact of self-anchoring and self-stereotyping on identification was recently provided in a study by van Veelen et al. (2013a). These authors investigated changes in group identity development among first-year psychology students. Students were asked to fill out a questionnaire on their identification with psychology students in the first month of their studies, and again after six to seven months, when group membership was expected to be well-established (see Amiot et al., 2007). Results showed that at the beginning of group membership, self-anchoring predicted identification whereas self-stereotyping did not. In contrast, self-stereotyping, but not self-anchoring, had a longitudinal impact on full-fledged group members' identification[9]. Obviously, more research is needed to further substantiate the differential impact of self-anchoring and self-stereotyping over the course of group membership. Yet, these findings provide preliminary support for the idea that newcomers in groups rely more heavily on their personal than on the social self to form a group bond, whereas vice versa is true when group membership is more well established.

Minority/majority position. We assume that the role the role of self-anchoring and self-stereotyping is also different for members of a minority, relative to a majority group[10]. Specifically, as discussed before, people in minority groups tend to self-stereotype more strongly than people in a majority group because generally a minority's membership is more salient and important compared to a majority's membership (e.g., Latrofa et al., 2010). In contrast, majority, more than minority members, tend to identify with the group while their personal self is still salient (Simon & Kampmeier, 2001). Moreover, when faced with identity threat, low-status minority members' self-stereotyping positively impacts on their identification and subjective well-being in the minority subgroup (Latrofa, Vaes, & Cadinu, 2012; Latrofa et al., 2009). Thus, for minority members, more than for majority members, self-stereotyping may be a good strategy to identify and protect themselves against identity threat, and re-affirm the positive subgroup identity and well-being (see also Brandscombe Schmitt, & Harvey, 1999).

However, self-stereotyping may not only have a protective function for minority, but it may also legitimize minority and majority members' relative status positions in the social hierarchy (Laurin et al., 2011). Specifically, Laurin and colleagues showed that the more both men and women attributed gender stereotypes to themselves (i.e. self-stereotype), the more they legitimized status differences

between men and women. Thus, paradoxically, within their own *subgroup,* self-stereotyping may protect low-status female group members' well-being and identification (Latrofa et al., 2009; 2012), but in the larger *superordinate* social hierarchy self-stereotyping may justify female group members' unfair treatment, discrimination, and a lack of inclusion relative to men (Laurin et al., 2011).

Such paradoxical effect of self-stereotyping for minority members within their subgroup relative to in the broader superordinate context is highly relevant in today's social contexts. Specifically, modern social groups are often no longer single entities, but rather consist of different national, religious, ethnic and cultural subgroups. These superordinate groups typically lack homogeneity, but are internally structured in terms of hierarchically nested subgroups (Hogg, Abrams, Otten, & Hinkle. 2004), and they require majority and minority members to co-exist within the same, superordinate group.

Prior research on ingroup projection has already shown how group members' identification with a *superordinate* group is typically influenced by their relative *subgroup* position (i.e, minority or majority position). In particular, majority, more than minority members, tend to project subgroup characteristics on the overarching identity, resulting in higher levels of identification with the superordinate group among majority, relative to minority members (Waldzus, Mummendey, Wenzel, & Boettcher, 2004). Yet *ingroup projection* (subgroup → superordinate group) is not the same as self-anchoring (i.e., *social projection*) in superordinate groups (self → superordinate group; Bianchi et al., 2009). Therefore, we believe that the cognitive dual-pathway model may provide important insights as to how identification with superordinate groups may best be achieved depending on whether one belongs to a majority or a minority subgroup.

In recent research, first empirical support was found for the differential impact of self-anchoring and self-stereotyping on minority and majority members' identification with a superordinate group (van Veelen et al., 2012b). Specifically, these authors reasoned that in superordinate groups, the group prototypes typically only resonate to majority, but not to minority group members. Consequently, self-stereotyping likely works best as a cognitive route to identification among those who fit the 'group prototypicality-bill', namely the majority members. Conversely, it is likely to hinder those who are comparatively deviant from the group prototype, namely the minority members. In contrast to self-stereotyping, self-anchoring does not rely on perceived similarity to prototypical group characteristics, but rather on the personal self. Everyone has a personal self at his/her disposal, which can be used to infer a

cognitive relation with a superordinate group. In fact, people can project personal attributes to the superordinate category (which includes other subgroups) almost as strongly as they can project to more local subgroups, as long as the self is included in the superordinate group (Krueger & Zeiger, 2003; Krueger & Didonato, 2008; Riketta & Sacremento, 2008; Bianchi et al., 2009). Therefore, self-anchoring may allow both majority *and* minority members to successfully create a mental bond, and identify with the superordinate group, as it is no longer relevant whether one is a prototypical member or not.

Indeed, in their study, van Veelen et al (2012b) showed that self-anchoring fosters minority members' identification with the superordinate group more strongly than self-stereotyping, whereas the two cognitive pathways resulted in equal levels of identification among majority members. Hence, the relative impact of self-stereotyping and self-anchoring on identification with superordinate groups seems to be moderated by minority versus majority status. Based on these recent results, we encourage future research on the application of the cognitive-dual pathway model to complex group contexts.

Taken together, there are relevant group context properties illustrating the dynamic role of self-anchoring and self-stereotyping in social identification. Specifically, there is strong empirical support for the notion that *group clarity* is an important moderator in the predictive power of self-anchoring and self-stereotyping for identification (e.g., van Veelen et al., 2012a). Moreover, first evidence was obtained for the moderating role of *time* and *minority/majority position* in groups in the cognitive routes to identification. In particular, recent studies provide support for the differential impact of self-stereotyping and self-anchoring for new compared to full-fledged group members (van Veelen et al., 2013a), and for minority compared to majority group members in superordinate groups (van Veelen et al., 2012b). Hence, based on these studies, it becomes clear that our cognitive understanding of how people identify with groups largely benefits from a dynamic approach; different cognitive routes (i.e., self-anchoring or self-stereotyping) provide an answer to how people identify in different types of group contexts.

Individual differences. Not only the properties of the group context, but also characteristics of the individual may impact on the dynamic role of self-anchoring and self-stereotyping for social identification. Do some people rely more heavily on their personal selves in making inferences about their social context, whereas others rather infer who they are from generic representations of the social context? And if so, on

what grounds do people do that? To our knowledge, there is little research on how individual differences impact on self-anchoring, and even less so on self-stereotyping. In the next section we will introduce three such individual difference variables, namely the *need and ability for cognitive structure*, *self-esteem,* and (cultural) *self-construal*.

The need and ability for cognitive structure. In 1998, Stanovich was the first to examine the relationship between individual differences in cognitive ability and social inference processes, such as self-anchoring. However, he found no significant relation between the two. In reviewing this literature, Krueger (1998b) concluded that most people project from the self to groups, and some do it more than others. But the question is: If cognitive ability alone cannot explain these individual differences, then what can?

Some of the first scholars to provide empirical insight on individual differences in self-anchoring were Otten and Bar-Tal (2002). They found that people high in ability *and* need for cognitive structure self-anchor more. Specifically, those individuals who are able to process information thoroughly and in a structured fashion in order to fulfill their need to create certainty in their lives (Bar-Tal, Kishon-Rabin, & Tabak, 1997) show a higher tendency to use the self as a source of information to infer their social context.

From this, it seems evident that people's combined *need* an *ability* for cognitive structure impacts on self-anchoring. However, whether need and/or ability for cognitive structure are related to both self-anchoring and self-stereotyping, as predictors of identification, are still unclear. To provide further insight into this matter, it is necessary to measure both self-anchoring and self-stereotyping simultaneously in future research (a condition that is not met in the research by Otten & Bar-Tal, 2002). Such research could for example investigate what happens when people do have a high need for cognitive structure, but a low ability to create such structure themselves. One could speculate that in this situation, rather than focusing on the personal self, an individual may reach out to the group's prototypes to determine his/her position within the social group and to fulfill the need for cognitive structure. Such reasoning is in line with the Uncertainty Reduction Model's (URM; Hogg, 2000; 2007) proposition that people's social identification via self-stereotyping reduces uncertainty and provides structure in people's their lives.

Future research should provide a more direct test of the impact on need and ability for cognitive structure, and potentially investigate other individual difference variables relating to cognitive processing (for example global versus local processing

style; Förster & Dannenberg, 2010) to increase our knowledge of cognitive functioning in relation to social identification processes.

Self-esteem. Aside from individual differences in the cognitive domain, individual differences in evaluations of the self, namely self-esteem, may also impact on people's social inferences between the self and the ingroup. First evidence for this premise was provided by Gramzow and Gaertner (2005), who introduced the Self as Evaluative Base (SEB) model. In four experiments in minimal groups, these authors demonstrated that personal self-esteem enhanced positive ingroup evaluations (relative to outgroup evaluations), independently of the valence of the group context (ingroup and outgroup were objectively the same), independently of cognitive information-processing, and independently of other individual difference variables (i.e., Right Wing Authoritarianism; narcissism). Later research further refined this finding by showing that global self-esteem contributes to ingroup favoritism specifically through its association with the trait-based positivity of the self-image (Didonato et al., 2011).

Does this finding imply that those with high personal self-esteem also *identify* more strongly with groups via self-anchoring? To date, such mediating effect of self-anchoring in the relation between self-esteem and identification has not been investigated. Moreover, this question taps into an earlier discussion on the self-enhancing function of social identification via self-stereotyping (Abrams & Hogg, 1988), suggesting that social identification and specifically ingroup favoritism serves to boost self-enhancement among those with low self-esteem and vice versa. Evidence for this bi-directional reasoning on the relation between self-esteem, self-stereotyping and positive social identification is quite controversial (e.g., Brown, 2000), but could become clearer by investigating self-esteem in relation to both self-anchoring and self-stereotyping and social identification.

Self-construal. Finally, people's level of self-anchoring or self-stereotyping and its implications for social identification may not only be determined by individual differences in cognitive and evaluative functioning (cf. Gramzow et al., 2001; Gramzow & Gaertner, 2005), but also by people's personal preference to construe their self-concept based on personal goals, values and characteristics, or group goals, values and characteristics. There is an extensive amount of research showing that people within and across cultures vary in the extent to which they conceive of themselves based on their personal self, unique, and independent from their social

context (i.e., *individualism*) or based on their social self, interdependent, and embedded in their social context (i.e., *collectivism*; e.g., Bond & Cheung, 1983; Cousins, 1989; Hofstede, 1980; Markus & Kitayama, 1991; Oyserman & Lee, 2008; see Oyserman, Coon, & Kemmelmeier, 2002 for review).

At the individual level, the distinction between individualism versus collectivism is generally termed *independent* versus *interdependent* self-construal (Singelis, 1994; Gardner, Gabriel, & Lee, 1999). In the ODT, Brewer (1991) articulated these two dimensions, as two different motivations that people possess in relation to their group memberships, namely *the need to be distinct* and the *need to belong*. Scholars within this field of research state that the optimal balance between these two needs varies depending on individual and cultural differences in self-concept (Brewer & Gardner, 1996; Brewer & Roccas, 2001; Becker et al., 2012).

Thus far, little research has been conducted on how such variations in people's self-construal are related to self-anchoring and self-stereotyping as cognitive routes to identification. Prior research on social cognition and self-concept has shown that with individualism, judgment and causal inference are generally oriented to the person as the unit of analysis, whereas with collectivism, judgment and causal inference are generally oriented to the social context as the unit of analysis (Choi, Nisbett & Norenzayan, 1999; Miller, 1984; Morris & Peng, 1994). In line with this research, one may assume that, because identification via self-anchoring places such high emphasis on the personal self, this process may require an individualistic, uniquely defined self-concept. To the contrary, because identification via self-stereotyping places emphasis on assimilation and conformity to the social context, it may require a collectivistic, interdependent self-concept.

As a first indication of this premise, in recent research, self-anchoring and self-stereotyping, social identification, and their relation with people's *self-concept stability* was investigated. Self-concept stability refers to the extent to which individual self-concepts are stable and accessible across different situations and in interaction with different people (Kernis & Goldman, 2005), thus relating to an independent self-construal (Singelis, 1994). Two studies demonstrated that those individuals with highly stable self-concepts identified with their ingroups *via* self-anchoring (Study 1 & 2), but not *via* self-stereotyping (Study 2; van Veelen et al., 2011).

From this research, it seems that differences in self-construal may form an important explanatory factor in relation to the two cognitive pathways to social identification. However, the picture of this dynamic is still far from fully painted, and future research is certainly needed. For example, one could focus on the relation

between identification and self-construal by manipulating both orientations based on "I" versus "we" primes (Brewer & Gardner, 1996; see also Oyserman & Lee, 2008). Moreover, one could study the effects of self-anchoring and self-stereotyping as cognitive routes to identification cross-culturally, to potentially unravel how people from individualistic versus collectivistic cultures may attain their social identification via different cognitive pathways.

Altogether, the impact of individual differences on social identification processes (i.e., self-stereotyping and self-anchoring) is still a relatively unexplored area of research. However, the little evidence so far suggests that this topic may form a relevant area for further research.

Overall, the incorporation of properties of the group context and individual difference variables in our cognitive dual-pathway model (Figure 3) delineates the importance of a dynamic and context-dependent approach to the understanding of how people identify with groups. In future research, we encourage investigating *individual differences* in interaction with differences in the type of *group context*. We assume that the integration of group context and individual difference variables in the cognitive dual-pathway model allows for a deeper understanding of the dynamic role that self-anchoring and self-stereotyping play as cognitive routes to social identification. There is reason to believe that the extent to which people rely on the personal self or the social self to identify with their ingroup may vary in response to the interaction between individual differences (e.g., in cognitive, and evaluative self-perceptions, and in self-construal) and differences in group context properties (e.g., group's clarity, longitudinal group development, and complexity).

Implications and future perspectives

In this review we presented a cognitive dual-pathway model to demonstrate that there are two routes to identify with ingroups, namely via self-stereotyping and self-anchoring. These two cognitive inference processes to create a mental bond between the self and the ingroup can simultaneously, but distinctly predict the extent to which people identify with ingroups. Our integrative model of self-anchoring and self-stereotyping is firmly grounded in a review of theory and research on self-anchoring and self-stereotyping. Until recently, self-anchoring and self-stereotyping have lived relatively separate lives in the literature, which has been consequential both conceptually and methodologically. By reviewing the popular methods used to assess

self-anchoring and self-stereotyping, and by defining four measurement criteria that allow for the unequivocal and simultaneous measurement of the two processes, we hope to have laid the ground for substantially facilitating and improving research on the integrative potential of both pathways to self-ingroup overlap. Our model, based on the outlined methodological criteria and previous empirical findings, proposes an integrative perspective on the role of both the social self and the personal self in the formation of an individual's affective bond with their ingroup. Its application to different types of group contexts and among different individuals sets the stage for future research to further explore the dynamic interplay between the individual and the ingroup.

Personal and social self

The cognitive dual-pathway model adheres to the increased interest in the role of the personal self in social identity research (e.g., Sedikides & Brewer, 2001; Jetten & Postmes, 2006; Brewer & Roccas, 2001). In trying to understand how people function as an ingroup member, we argue that it is highly important to consider *both* the personal (individual) self and the social (collective) self. Importantly, this goal denotes an *interactive* view of the personal and the social self, in relation to social identity formation processes (see also Reid & Deaux, 1996; Deaux, 1993; Ethier & Deaux, 1994, Eidelman & Silvia, 2010).

Furthermore, until recently research on group norms and behavior has, at least implicitly, assumed that a group member conforming to ingroup norms is a highly identified group member whereas a group member deviating from ingroup norms is a low identifier (e.g., Ellemers, Spears, & Doosje, 2002; Terry & Hogg, 1996; White, Hogg, & Terry, 2002). However, more recent research demonstrates that people can be loyal to their ingroup (Hornsey & Jetten, 2004, 2005) and identify strongly with their ingroup (Packer, 2008) without necessarily conforming to ingroup norms. From a cognitive perspective, our model subscribes to this idea and offers a potential explanation of how non-conforming, but highly identified group members may build a group bond, namely via self-anchoring. Interestingly, one may even speculate that those who self-anchor highly are particularly mindful about the problems that current group norms pose to the ingroup (Hornsey, 2006), and aim to re-shape and negotiate ingroup norms and values to stimulate social change (Postmes, Baray, Haslam, Morton, & Swaab, 2006).

Whereas the personal self and the social self are distinct entities, our model emphasizes that the use of both as a source of inference to create self-group overlap shows that they are two cognitive means to the same end, namely to social identification. Indeed, in our research program, when measuring self-anchoring and self-stereotyping simultaneously, we generally find a positive correlation between the two processes: High identifiers generally use both pathways to create self-group overlap. Yet, there are variations in the strength of association between the two across studies and situations. For example, in the recently conducted longitudinal study on the impact of self-anchoring and self-stereotyping on newcomers' development of social identification, van Veelen et al. (2013a) found that the correlation between self-anchoring and self-stereotyping at the beginning of group membership was substantially lower than after six months of socialization with the group. This finding suggests an interesting link to a recently growing literature on identity fusion (Swann et al., 2012). Identify fusion implies that sometimes, personal and social self can collide completely. As such, future research should investigate the optimal level of association between self-anchoring and self-stereotyping that would qualify as fused identity.

Inclusive intergroup relations

Otten (2005) discussed possible consequences of self-anchoring and self-stereotyping for the perceived variability in people's perceptions of their group's identity. She argued that if self-anchoring is the process driving self-group overlap, then there should be relative variability in ingroup judgments across group members (i.e. heterogeneity). In contrast, because self-stereotyping is based on the premise that a consensual ingroup prototype is available, this process should reflect relatively little intragroup variability (i.e., homogeneity) in ingroup judgments. Such difference in variability of group's identity representation may be highly relevant and consequential for how people cognitively adapt to an increasingly complex, diverse society, and how intergroup relations may be improved within diverse group identities (see also Crisp & Meleady, 2012). Potentially, a shift from the social to the personal self in inferring a self-group relation within a diverse group may increase people's perceived level of complexity within a group identity (see also Crisp & Hewstone, 2007; Fiske & Neuberg, 1990).

Preliminary results from a recent study addressing this issue (van Veelen et al., 2012b) indeed show that self-anchoring may lead to a more inclusive and tolerant perspective on group diversity whereas self-stereotyping may foster similarity-based 'us' and 'them' thinking, thus leading to intergroup bias. Thus far, this research has been limited to laboratory group settings, in which diversity was based on one single category dimension, for example gender (i.e., men versus women) or ethnicity (i.e., native Dutch or Moroccan Dutch). Therefore, we highly encourage future research programs to focus on more complex, multiple group categorizations (Crisp & Hewstone, 2007), and on more natural group settings such as multicultural societies (Verkuyten, 2005) and diverse organizations (van Knippenberg, De Dreu, & Homan, 2004) to investigate when and why cognitive overlap with a diverse group can best be achieved based on the personal (self-anchoring) or on the social (self-stereotyping) self.

Conclusion

Considering that self-anchoring was originally introduced as a process to explain why in the Minimal Group Paradigm group members positively differentiate their ingroup from the outgroup (e.g., Cadinu & Rothbart, 1996), its current investigation, for example on the potentially beneficial implications for inclusive intergroup relations and identification with diverse groups (van Veelen et al., 2012b), indicates that this concept has come a long way. Based on this review, research on the joint role of self-anchoring and self-stereotyping in intra- and intergroup processes, will hopefully flourish in the future.

The Cognitive Dual-pathway Model to Social Identification may hopefully form a solid framework for such future research. As this review reveals, the model's core assumption that both the assimilation to ingroup prototypes (i.e., self-stereotyping), as well as the projection of personal attributes onto the ingroup (i.e., self-anchoring), positively predict social identification, is well grounded in empirical findings. Based on this model, we are able to explain how the guest stars of this review, namely Ron the soccer fan, Mark the newcomer, Carla the dog-loving psychologists, Betty the astrologist, and Rose the astronomer may use different cognitive routes to attain their social identification. More generally, unraveling the cognitive underpinnings of social identification, and showing the moderating impact of properties of the group context

and individual differences, allow for a better understanding of why some people do, and others do not identify with certain ingroups, why people can belong to certain ingroups, without necessarily conforming to group prototypes, and how people may cognitively adapt to an increasingly complex and diverse social environment.

Notes

[1.] In this article, the term social identification refers to identification with groups, and in particular *ingroups* (i.e., relevant groups that the individual is a member of).

[2.] Importantly, self-anchoring can be seen as a specific inference process within the broader concept of social projection. Social projection (also called 'egocentric perception', 'false consensus' or 'self-as-informational base') denotes people's tendency to project their own traits, attitudes or behaviors onto other entities (e.g., groups, persons or objects; e.g., Ross, Greene, & House, 1977; Marks & Miller, 1987; Krueger, 2000; 2007; Mullen et al., 1985; Gramzow, Gaertner, & Sedikides, 2001). This more general inference process has been investigated in relation to interpersonal relations (e.g., Ames, 2004b), social dilemma's and negotiations (e.g. Ames, 2004a; 2004b; Ames, Weber & Zou, 2012; Acevedo & Krueger, 2005) and in(ter)group processes (e.g., Robbins & Krueger, 2005; Otten & Wentura, 2001; Krueger & Zeiger, 1993; Mullen, Dovidio, Johnson, & Copper, 1992; Spears & Manstead, 1990). Self-anchoring is a type of social projection that specifically denotes the self → *ingroup* inference process. Therefore, we will use the term self-anchoring throughout this manuscript.

[3.] Ames (2004a and b) also argued for a more egalitarian perspective on the role of self-knowledge and group knowledge (i.e., stereotypes) when making social inferences. Yet, rather than focusing on self-ingroup overlap, this research specifically compared the use of self-knowledge and stereotypes when making inferences about *outgroup targets*.

[4.] Considering that our primary goal is to focus on how people identify with ingroups, we limit the scope of our methodological evaluation of self-anchoring and self-stereotyping to measures pertaining to the self-ingroup relation, and we do not focus on other forms of social inference, for example false consensus (e.g., in relation to other persons, outgroups or objects) or stereotyping (e.g., stereotyping of others).

[5.] Profile correlations can be considered as similar to a procedure in which regression analyses is used to calculate the associative strength between self and group ratings

(i.e, β regression weights are comparable to Pearson's r). Thus in Table 1 we included self-group overlap calculated by means of regression analyses in the profile correlation section.

6. This was also the case in Eidelman and Silvia's (2010), and Cadinu et al.'s (2012) measure of self-stereotyping.

7. Some scholars have measured social identification at an implicit level, for example based on the IAT (e.g., Nosek,, Banaji, & Greenwald, 2002), yet we argue that explicit, more than imlicit measures, capture the conceptual richness of social identification as was defined by Tajfel (1978). Specifically, an implicit measure merely taps into a valence association with an ingroup, but not the emotional significance and commitment people attach to an ingroup (in fact, high identification is oftentimes stronger in groups that are devalued or negatively evaluated, relative to identification in positively evaluated groups; e.g., Jetten, Branscombe, Schmitt, & Spears, 2001; Ellemers et al., 2002). Therefore, we only focus on *explicit* measures of social identification.

8. Note however, that only in the study by Latrofa and colleagues (2010) the impact of self-stereotyping on social identification was tested controlling for self-anchoring. This was not the case for the studies conducted by Latrofa et al (2009) and Cadinu et al., (2012) because either stereotype-irrelevant traits were not included in the analyses (Latrofa et al., 2009), or the group context was made salient prior to self-ratings on stereotype irrelevant traits (Cadinu et al., 2012).

9. Interestingly, as noted before, no evidence was found for the reversed causal pattern (i.e., a longitudinal effect of social identification on full-fledged group members' self-stereotyping). Hence, these findings corroborate our view that self-stereotyping can (also) be a predictor of social identification, and is not necessarily just an outcome variable.

10. Importantly, minority or majority positions in a group can be attributed to different aspects of the subgroup relationship, for example power over recourses, status, numerical size, or a combination of these. We cite work on minority/majority positions focusing on several of such attributions. Importantly, we assume that our theoretical argument should be generalizable, as long as there is salience and accessibility of asymmetrical subgroup categories (Tajfel & Wilkes, 1963).

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Summary (In Dutch)

Integratie van Ik en Wij

Cognitieve Routes naar Sociale Identificatie

Mensen hebben van nature een behoefte om bij groepen te horen. Groepslidmaatschap biedt mensen veiligheid, gezondheid, zekerheid en sociale steun. Op die manier stelt groepslidmaatschap mensen in staat om doelen te bereiken die alleen moeilijk te bereiken zijn, variërend van het bouwen van een huis, tot het uitvechten van een oorlog. De mate waarin mensen zich emotioneel verbonden voelen met groepen wordt sociale identificatie genoemd. Hoe sterker de sociale identificatie met een groep, hoe sterker de betrokkenheid bij de groep. Zo is uit onderzoek gebleken dat mensen die zich sterk identificeren met een groep zeer gecommitteerd zijn aan deze groep, opkomen voor de normen en waarden van de groep en hard werken om groepsdoelen succesvol te bereiken (e.g., Brown, 2000; Ellemers, Spears & Doosje; Haslam, van Knippenberg, Platow, & Ellemers, 2003). Kortom, sociale identificatie vervult een sleutelrol voor het welbevinden en succesvol functioneren van zowel het individu zelf als de groep als geheel.

Ondanks het feit dat er veel onderzoek is gedaan naar *waarom* sociale identificatie zo belangrijk is, is er nog veel onduidelijkheid over *hoe* sociale identificatie tot stand komt. Welke cognitieve processen liggen ten grondslag aan de vorming van een affectieve band tussen het individu en de groep? Een antwoord op deze vraag is van groot belang, in het bijzonder in de huidige samenleving. Door toenemende globalisatie, migratie en technologische communicatie wordt de Westerse samenleving steeds meer divers en complex. Het gevolg hiervan is dat er een versnippering plaatsvindt tussen mensen in hun levensstijl, normen, waarden en gedragingen. Denk bijvoorbeeld aan culturele diversiteit op de werkvloer en in de buurt, of het ontstaan van talrijke virtuele groepen op het internet. Door deze trend neemt de sociale cohesie af en wordt de sociale identificatie dus bemoeilijkt (Joppke, 2004).

De vraag hoe mensen een band vormen met verschillende soorten groepen is dus zeer belangrijk. Het geven van een antwoord op deze vraag is het centrale doel van dit proefschrift. Specifiek richt dit proefschrift zich op het bieden van inzicht in de cognitieve processen die ten grondslag liggen aan sociale identificatie. Er zal worden aangetoond dat er twee cognitieve processen zijn die ten grondslag liggen aan sociale identificatie, namelijk (1) via de assimilatie aan prototypische groepskenmerken (***self-stereotyping***) en (2) via het gebruik van persoonlijke kenmerken als anker om een groepsidentiteit vorm te geven (***self-anchoring***). Met dit inzicht kan vanuit sociaal-psychologisch oogpunt een handvat worden geboden voor het verklaren en faciliteren van sociale identificatie in verschillende typen groepen.

Een cognitieve band tussen individu en groep

De mate van sociale identificatie hangt af van de mate waarin men overlap waarneemt tussen het zelfbeeld ('wie ben ik als individu') en het groepsbeeld ('wat zijn de prototypische kenmerken van de groep'). Hoe groter deze zelf-groep overlap, hoe meer identificatie (Tropp & Wright, 2001).

De klassieke *Social Identity Theory* (Tajfel & Turner, 1979) en de *Self-Categorization Theory* (Turner et al., 1987) gaan er vanuit dat zelf-groep overlap tot stand komt doordat men zich assimileert aan prototypische groepskenmerken. Dit proces heet ***self-stereotyping***. Meer specifiek wordt gesteld dat mensen een persoonlijke en een sociale identiteit hebben. Wanneer groepslidmaatschap saillant is, wordt de sociale identiteit geactiveerd en wie je verder bent als uniek persoon schuift naar de achtergrond (depersonaliseert). Bijvoorbeeld, Carla is psychologiestudent. Wanneer Carla hoorcollege volgt bij psychologie wordt het groepslidmaatschap 'psychologiestudent' saillant. Daarmee, worden prototypische groepskenmerken van de psychologiestudent actief, bijvoorbeeld 'geïnteresseerd in menselijk gedrag', 'emotioneel' en 'sociaal invoelend'. Hoe sterker Carla zich assimileert aan deze prototypische groepskenmerken, hoe sterker de waargenomen overlap met de groep 'psychologiestudenten'. Wie Carla verder als persoon is, speelt in dit proces geen rol. Concluderend wordt met *self-stereotyping* verondersteld dat een zelf-groep band ontstaat door assimilatie aan het groepsprototype. Daarmee gaat de connectie met het persoonlijke zelf dus verloren.

Onderzoek heeft aangetoond dat de mate van *self-stereotyping* een positieve voorspeller is voor de mate van sociale identificatie (e.g., Ellemers et al., 2002; Latrofa et al., 2010). Hoe meer men zich assimileert aan het groepsprototype, hoe sterker de affectieve band met de groep. Zonder deze bevinding in twijfel te trekken, wordt in dit proefschrift wel gesteld dat self-stereotyping als *enige* cognitieve verklaring voor sociale identificatie in sommige situaties te kort schiet. *Self-stereotyping* verondersteld namelijk dat de definitie van het groepsprototype altijd duidelijk is, beschikbaar is, of van toepassing is op het individuele groepslid. Echter, uit voorgaande voorbeelden van complexe en diverse groepen in de samenleving blijkt al dat dit lang niet altijd het geval is. Bijvoorbeeld, een aantal jaren geleden is in Nederland een debat ontstaan over wat de Nederlandse identiteit precies inhoud (WWR, 2008). Zo heeft Kroonprinses Maxima gezegd dat de Nederlandse identiteit niet bestaat. Ook maatschappij filosoof Maarten van Rossum stelde dat Nederland helemaal geen kenmerkende, stabiele nationale identiteit heeft. Kortom, men ervaart onduidelijkheid

over de prototypische kenmerken van 'de Nederlander'. Bij een dergelijke onduidelijkheid is het de vraag aan welk groepsbeeld men zich aan moet assimileren om tot sociale identificatie te komen.

Daarnaast is het zo dat meer dan ooit tevoren, groepen in de Westerse samenleving worden gekarakteriseerd door een complexe combinatie van mensen uit verschillende culturen, of met verschillende religies, of van verschillende etnische achtergrond (Crisp & Meleady, 2012). Hoewel verschillen tussen groepsleden dus toenemen, biedt de assimilatie aan een groepsprototype (i.e., *self-stereotyping*) weinig tot geen ruimte voor een gelijkwaardige representatie van kleinere en grotere subgroepen binnen de overkoepelende groep.

In dit proefschrift wordt gesteld dat er naast *self-stereotyping* nog een andere cognitieve route is om zelf-groep overlap te creëren. Deze route wordt verondersteld ook voorspellend te zijn voor de mate van sociale identificatie. Onderzoek heeft namelijk aangetoond dat zelf-groep overlap ook tot stand kan komen via ***self-anchoring*** (Cadinu & Rothbart, 1996). *Self-anchoring* is het omgekeerde proces van *self-stereotyping*, namelijk de projectie van individuele kenmerken op de groep. Hoe sterker de projectie van individuele kenmerken op de groep, hoe sterker de zelf-groep overlap. Als voorbeeld nemen we weer Carla de psychologiestudent. Carla vindt zichzelf als persoon 'extravert' en 'muzikaal'. De mate waarin Carla de persoonlijke eigenschappen 'extravert' en 'muzikaal' ook van toepassing vindt op psychologiestudenten geeft de mate van *self-anchoring* weer. Met andere woorden, Carla gebruikt haar persoonlijke zelfbeeld als anker om mentale overlap te creëren met de groep 'psychologiestudenten'. Dus, in tegenstelling tot *self-stereotyping* veronderstelt *self-anchoring* dat het persoonlijke zelf een centrale rol speelt in het vormen van een groepsband.

Wanneer *self-anchoring* ook een cognitieve voorspeller zou zijn voor sociale identificatie kan dit mogelijk inzicht bieden in hoe mensen zich identificeren met groepen waarvan de prototypische groepskenmerken niet duidelijk zijn, niet beschikbaar zijn, of niet van toepassing zijn op het individu. Mentale overlap tussen het zelf en de groep via *self-anchoring* is namelijk gebaseerd op het persoonlijke zelf, en kan daarmee gecreëerd worden onafhankelijk van de mate waarin men zichzelf als een prototypisch groepslid beschouwd (Otten & Epstude, 2006). Tot op heden is er echter nog geen onderzoek gedaan is naar *self-anchoring* als cognitieve route naar sociale identificatie. Ook weten we nog niet of de manier waarop men zich identificeert met een groep (via *self-stereotyping* of *self-anchoring*) afhangt van het type groep waar men lid van is. Het creëren van inzicht in deze processen vormt de centrale doelstelling van dit

proefschrift.

In de volgende sectie zal ik een overzicht geven van de inhoud van de hoofdstukken in dit proefschrift. Hierin zal ik eerst laten zien dat self-anchoring, naast self-stereotyping inderdaad een cognitieve voorspeller is van sociale identificatie (Hoofdstuk 2). Vervolgens zal ik aantonen dat *hoe* men zich identificeert met een groep (ofwel via self-anchoring of wel via self-stereotyping) afhangt van hoe duidelijk een groepsdefinitie is (Hoofdstuk 3). In Hoofdstuk 4 bespreek ik de rol van de duur van het groepslidmaatschap. Ik zal laten zien dat voor nieuwkomers self-anchoring voorspellend is voor identificatie, terwijl voor 'volwaardige groepsleden', die al een tijd lid zijn van een groep, self-stereotyping juist meer voorspellend is. In hoofdstuk 5 pas ik de processen *self-anchoring* en *self-stereotyping* toe in diverse groepen en onderzoek de gevolgen voor de mate van identificatie waardering voor diversiteit onder minder- en meerderheidsleden. Als sluitstuk van dit proefschrift presenteer ik in hoofdstuk 7 een model voor sociale identificatie waarin zowel theoretisch als methodologisch de twee cognitieve processen self-anchoring en self-stereotyping worden samengebracht.

Dit proefschrift

In dit proefschrift wordt in **Hoofdstuk 2** empirisch aangetoond dat de mate waarin men individuele kenmerken op een groep projecteert (i.e. *self-anchoring*) inderdaad positief bijdraagt aan de mate van sociale identificatie. Ook worden *self-anchoring* en *self-stereotyping* geïntegreerd in één onderzoeksparadigma om aan te tonen dat beide unieke cognitieve routes zijn die de mate van sociale identificatie kunnen voorspellen. Verder blijkt uit de resultaten van dit hoofdstuk dat er ook individuele verschillen zijn in de manier waarop mensen een zelf-groep band opbouwen: mensen die een meer stabiel zelfconcept hebben maken meer gebruik van het persoonlijke zelf als anker om een groepsband te vormen (i.e., *self-anchoring*), terwijl geen relatie werden gevonden met self-stereotyping. Op de vraag "Hoe identificeren mensen zich met groepen" kan dus tweeledig worden geantwoord: via zowel de assimilatie aan het groepsprototype, als via de projectie van individuele kenmerken op de groep. Theoretisch gezien betekent dit dat bij het vormen van een groepsband, de persoonlijke en de sociale identiteit niet noodzakelijkerwijs tegenpolen zijn (zoals verondersteld door de *Social Categorization Theory*; Turner et al., 1987), maar eerder als complementair kunnen worden beschouwd. Praktisch gezien biedt het inzicht dat zowel *self-anchoring* als *self-stereotyping* tot sociale identificatie leidt de mogelijkheid om te

verklaren hoe sociale identificatie tot stand komt in verschillende typen groepen en voor verschillende typen groepsleden.

Voortbouwend op hoofdstuk 2, wordt in **hoofdstuk 3** verondersteld dat het voorspellend vermogen van *self-anchoring* en *self-stereotyping* op sociale identificatie afhangt van het type groepscontext. Specifiek wordt onderzocht hoe mensen zich identificeren met groepen die een duidelijke of een onduidelijke groepsdefinitie hebben. Een groep is duidelijk gedefinieerd wanneer er eenduidige kennis beschikbaar is over de inhoud van de groepsidentiteit. Daarentegen is een groep onduidelijk gedefinieerd wanneer er geen eenduidigheid bestaat over de betekenis van een groepsidentiteit. Zoals eerder beschreven vond enkele jaren geleden een discussie plaats over wat de Nederlandse identiteit precies inhoud. Daar waar sommige Nederlanders vonden dat de Nederlandse identiteit onduidelijk is, waren anderen van mening dat het juist erg duidelijk is wat 'Nederlander zijn' betekent (WWR, 2008). De vraag is, wat een (on)duidelijke groepsdefinitie doet met de manier waarop mensen zich identificeren met een groep. In twee experimentele studies wordt aangetoond dat in een *duidelijk* gedefinieerde groep *self-stereotyping* (en niet *self-anchoring*) een positieve voorspeller is voor de mate van sociale identificatie. Echter, in een *onduidelijk* gedefinieerde groep voorspelt *self-anchoring* (en niet *self-stereotyping*) de mate van sociale identificatie. Kortom, het hangt af van de (on)duidelijkheid van de groepscontext of men het groepsprototype (sociale identiteit) of het individuele zelfbeeld (persoonlijke identiteit) als uitgangspunt neemt om zich te identificeren met een groep.

In **Hoofdstuk 4** wordt nog een belangrijke factor geïntroduceerd die van invloed is op de rol van *self-stereotyping* en *self-anchoring* als voorspellers voor sociale identificatie. Hier wordt een longitudinaal onderzoek gepresenteerd dat laat zien dat de manier waarop mensen zich identificeren met een groep verandert afhankelijk van hoe lang men lid is van een groep. Nieuwkomers identificeren zich op een andere manier dan 'oudgedienden'. Als nieuwkomer is er over het algemeen nog weinig kennis beschikbaar over de typische normen en waarden van de groep. Vanwege dit gebrek aan kennis over het groepsprototype wordt verondersteld dat nieuwkomers het persoonlijke zelf als anker nemen om mentale overlap te creëren met de groep (i.e *self-anchoring*). Dit vormt naar verwachting de basis voor de mate van sociale identificatie. Naarmate groepsleden langer lid zijn, maken zij een proces van socialisatie door en bouwt de kennis over groepsnormen en waarden zich op. Naar verwachting leidt dit ertoe dat assimilatie aan het groepsprototype (i.e., *self-stereotyping*) een sterkere

voorspeller wordt voor sociale identificatie. In een longitudinale studie, onder eerstejaars psychologiestudenten, wordt ondersteuning gevonden voor de verwachtingen. *Self-anchoring* blijkt meer voorspellend te zijn voor identificatie onder nieuwkomers, terwijl *self-stereotyping* meer voorspellend blijkt voor identificatie aan het einde van het eerste studiejaar, wanneer het proces van groepssocialisatie is voltooid.

In **hoofdstuk 5 en 6** worden *self-anchoring* en *self-stereotyping* onderzocht in relatie tot sociale identificatie in diverse groepen. Specifiek wordt gekeken hoe minder- en meerderheidsleden in een groep zich identificeren met de diverse groep als geheel (i.e., de overkoepelende groep). Belangrijk is dat in tegenstelling tot in de andere empirische studies in dit proefschrift, beide cognitieve processen in de studies in Hoofdstuk 5 en 6 niet gemeten worden, maar gemanipuleerd. Met andere woorden, in deze studies vragen we minder- en meerderheidsleden in een diverse groep om of zelf-groep overlap te creëren op basis van prototypische groepskenmerken, of op basis van individuele kenmerken. Een dergelijke manipulatie biedt een potentieel startpunt om in de toekomst interventies te ontwikkelen die zich richten op het faciliteren van sociale identificatie in complexe of diverse groepen, waar het creëren van sociale cohesie vaak een uitdaging blijkt te zijn. Mijn veronderstelling is dat in diverse groepen zelf-groep overlap gebaseerd op het conformeren aan groepsprototypes een negatief effect heeft op identificatie en waardering voor diversiteit, terwijl overlap gebaseerd op de projectie van individuele kenmerken een positief effect heeft.

Hoofdstuk 5: De mate van sociale identificatie in een diverse groep is over het algemeen lager onder minderheidsleden dan onder meerderheidsleden. Een belangrijke oorzaak hiervoor is dat minderheidsleden als niet-prototypisch worden gezien, terwijl meerderheidsleden als wel-prototypisch worden gezien in diverse groepen. Het groepsprototype is daarmee wel van toepassing op meerderheidsleden, maar niet op minderheidsleden. Verwacht wordt dan ook dat voor minderheidsleden *self-stereotyping* belemmerend werkt voor de mate van sociale identificatie. *Self-anchoring* daarentegen, richt zich op zelf-groep overlap gebaseerd op het individu. Het succesvol vormen van zelf-groep overlap hangt daarmee dus niet af van of men wel of geen prototypisch groepslid is. Voor minderheidsleden kan dit betekenen dat *self-anchoring* een faciliterende werking zou kunnen hebben op identificatie. Deze verwachtingen worden ondersteund door de resultaten van een experiment. Voor meerderheidsleden leiden beide cognitieve processen tot een gelijke mate van identificatie met de overkoepelende groep. Voor minderheidsleden leidt *self-anchoring* tot hogere mate van identificatie met de overkoepelende groep dan *self-stereotyping.*

Hoofdstuk 6: Uit recente literatuur blijkt dat meerderheidsleden vaak sceptisch zijn over de meerwaarde van diversiteit en de aanwezigheid van (etnische) minderheidsleden in groepen (Plaut et al., 2011; Verkuyten, 2005). In Hoofdstuk 6 richten we ons daarom specifiek op meerderheidsleden in diverse groepen en gaan we in op de vraag of *self-anchoring* en *self-stereotyping* positieve dan wel negatieve gevolgen kunnen hebben voor de waardering voor diversiteit en de attitude jegens minderheidsleden in een diverse groep. Uit de resultaten van twee experimenten blijkt dat in vergelijking tot *self-stereotyping, self-anchoring* inderdaad een positievere werking heeft op zowel de waardering voor diversiteit als op de attitudes jegens de minderheidsleden. Kortom, *self-anchoring* lijkt het zogenaamde 'hokjes-denken' onder meerderheidsleden in diverse groepen te kunnen doorbreken: wie er allemaal bij mogen horen in een groep hoeft niet per definitie af te hangen van of men een prototypisch groepslid is of niet.

Ten slotte wordt in **Hoofdstuk 7** een theoretisch model gepresenteerd genaamd: *A Cognitive Dual-Pathway model to Social identification* [vrij vertaald: *Een Model voor Twee Cognitieve routes naar Sociale Identificatie]*. In dit hoofdstuk wordt op basis van een literatuuronderzoek naar de theorie en methodologie achter *self-stereotyping* en *self-anchoring* een kader geschetst voor de integratie van beide processen als twee cognitieve paden naar sociale identificatie. Het model laat zien dat zowel de assimilatie aan het groepsprototype (i.e., self-stereotyping) als de projectie van individuele kenmerken op de groep (i.e., self-anchoring) voorspellend kunnen zijn voor sociale identificatie. Belangrijk is dat dit model *dynamisch* is: de mate waarin beide cognitieve processen voorspellend zijn voor identificatie hangt af van zowel het type groep (bijvoorbeeld: is de groep duidelijk gedefinieerd, nieuw of divers?), als van individuele verschillen (bijvoorbeeld: heeft het individu een stabiel zelfconcept?). In dit hoofdstuk worden alle voorgaande empirische hoofdstukken van dit proefschrift geïntegreerd, en in een breder theoretisch en methodologisch perspectief geplaatst. Dit hoofdstuk vormt tevens de afsluiting en de kritische reflectie op dit proefschrift.

Samenvattend wordt in dit proefschrift vanuit een cognitief oogpunt antwoord gegeven op de vraag: Hoe identificeren mensen zich met groepen? Uit de empirische studies blijkt dat dit op twee manieren kan, namelijk (1) via de assimilatie aan het groepsprototoype (*self-stereotyping*) en (2) via de projectie van individuele kenmerken op de groep (*self-anchoring*). Met name dit laatste proces is 'nieuw' in relatie tot sociale identificatie en biedt daarmee ook aanknopingspunten voor een breder begrip van hoe sociale identificatie tot stand komt. Ook biedt toevoeging van self-

anchoring mogelijkheden tot interventies ter bevordering van sociale identificatie in groepen waarvan de prototypische kenmerken onduidelijk of onbekend zijn, of niet goed passen bij het individu. Specifiek is aangetoond dat *self-anchoring* de mate van sociale identificatie voorspelt wanneer een groepsdefinitie onduidelijk is (Hoofdstuk 3) wanneer iemand een nieuwkomer is in een groep (Hoofdstuk 4) of wanneer iemand een minderheidslid is in een diverse groep (Hoofdstuk 5). Samengenomen vormen deze resultaten de basis voor de ontwikkeling van een cognitief model van sociale identificatie (Hoofdstuk 7), waarin de verschillende theoretische stromingen waar *self-stereotyping* en *self-anchoring* uit voort komen en de bevindingen uit empirisch onderzoek in dit veld worden geïntegreerd. Deze analyse biedt methodologische handvaten om het model in empirisch onderzoek verder te toetsen, en leidt tot nieuwe perspectieven voor het verklaren en faciliteren van sociale identificatie in een steeds complexer en meer divers wordende samenleving.

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Ruth

Curriculum Vitae

Ruth van Veelen was born on June 27th, 1984 in Amsterdam, the Netherlands. She grew up on a horse farm in the country side. After she passed her secondary education at the Ulenhof College in Doetinchem, she moved to Groningen in 2002 to study psychology. Ruth's first encounter with the concept of self-anchoring was in 2005, when she completed her bachelor's thesis with Sabine Otten as her supervisor. In 2006, Ruth finished her master's in Work, Organizational & Personnel psychology. For her thesis she conducted applied research on an Intercultural Effectiveness training for immigrants on the Dutch labor market.

In 2007, Ruth was admitted to the Research Master program "Human Behavior in Social Context" She returned to Sabine Otten and to self-anchoring to conduct research for her master thesis entitled "Individual differences in cognitive projection processes: The impact of individualism and collectivism on the relationship between self-anchoring, self-stereotyping and social identification". She graduated *cum laude* in 2008.

Ruth started her PhD-project in 2008. Her dissertation focussed on the dynamic between the personal and the social self as cognitive paths to social identification. She has presented her work at various international conferences, such as the European Association of Social Psychology and the Society for Personality and Social Psychology In 2012 she visited the University of Padova (Italy) for several months as a guest researcher to work with Mara Cadinu and Anne Maass on a review paper. She also successfully comleted a coaching course, and coached (PhD) students in their professional development. Since September 2013, Ruth works as assistant professor at the faculty of Behavioural Sciences for the Educational Science & Technology department at the University of Twente.

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